

**TEST REPORT****IEC 62368-1****Audio/video, information and communication technology equipment****Part 1: Safety requirements****Report Number**.....: **AE20-0051721-01**

Date of issue.....: 07.10.2020

Total number of pages.....: 74 including Annex 1

Applicant's name.....: 4BOX S.r.l.

Address.....: Via Filippo Brunelleschi, 16 IT- 20146 Milano

Test specification:

Standard.....: IEC 62368-1:2014 (Second Edition)

IEC 60065:2014 (Eighth Edition)

IEC 60950-1:2005 (Second Edition) + A1:2009 + A2:2013

Test procedure.....: CB Scheme

Non-standard test method.....: N/A

Test Report Form No.....: IEC62368_1&IEC60065&IEC60950_1A

Test Report Form(s) Originator.....: UL(US)

Master TRF.....: 2015-06

Copyright © 2015 Worldwide System for Conformity Testing and Certification of Electrotechnical Equipment and Components (IECEE), Geneva, Switzerland. All rights reserved.

This publication may be reproduced in whole or in part for non-commercial purposes as long as the IECEE is acknowledged as copyright owner and source of the material. IECEE takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context.



If this Test Report Form is used by non-IECEE members, the IECEE/IEC logo and the reference to the CB Scheme procedure shall be removed.

This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

General disclaimer:

The test results presented in this report relate only to the object tested.

This report shall not be reproduced, except in full, without the written approval of the Issuing CB Testing Laboratory. The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report.

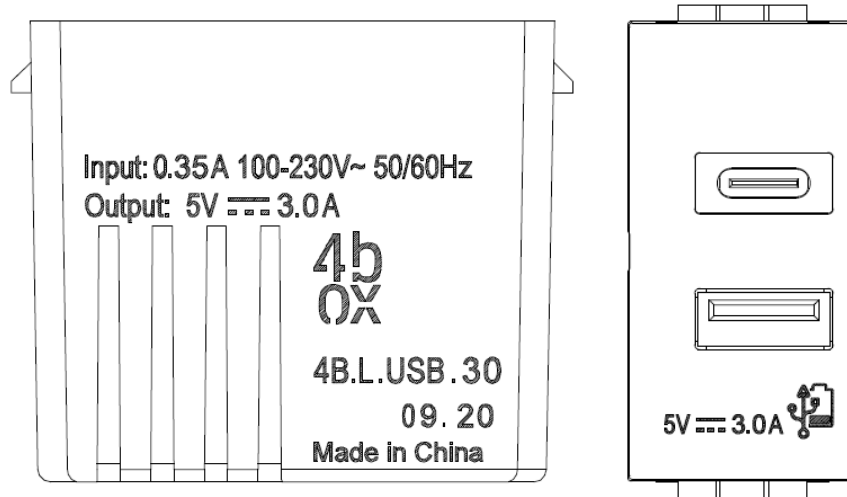
Test Item description	USB power supply
Trade Mark.....	
Manufacturer.....	4BOX S.r.l. - Via Filippo Brunelleschi, 16 IT- 20146 Milano
Model/Type reference	See "General product information"
Rating.....	Input:100-230V~, 50/60Hz, 0.35A; Output: 5V  , 3A

Testing procedure and testing location:		
<input checked="" type="checkbox"/>	CB Testing Laboratory:	
Testing location/ address		IMQ – S.p.A. - Milano Via Quintiliano 43, I-20138 Milano
<input type="checkbox"/>	Associated CB Testing Laboratory:	
Testing location/ address.....		
Tested by (name, function, signature)....:		Test Eng. Marco Giacometti
Approved by (name, function, signature) :		Lab. Manager Simone Bilotta
<input type="checkbox"/>	Testing procedure: CTF Stage 1	
Testing location/ address.....		
Tested by (name, function, signature)....:		
Approved by (name, function, signature) :		
<input type="checkbox"/>	Testing procedure: CTF Stage 2	
Testing location/ address.....		
Tested by (name, function, signature)....:		
Witnessed by (name, function, signature):		
Approved by (name, function, signature) :		
<input type="checkbox"/>	Testing procedure: CTF Stage 3	
<input type="checkbox"/>	Testing procedure: CTF Stage 4	
Testing location/ address.....		
Tested by (name, function, signature)....:		
Approved by (name, function, signature) :		
Supervised by (name, function, signature):		

List of Attachments (including a total number of pages in each attachment): Annex 1: photographs, pages 4 Annex 2: drawings and track fuse, pages 3 Annex 3: European Group Differences And National Differences, pages 9	
Summary of testing:	
5.2 Classification and limits of electrical energy sources 5.2.2.2 Steady State Voltage and Current conditions 5.4.1.4 Maximum operating temperature 5.4.1.8 Determination of working voltage 5.4.1.10.3 Ball pressure test 5.4.2.2 Minimum Clearances/Creepage distance 5.4.2.3 Minimum Clearances distances using required withstand voltage 5.4.4 Solid insulation 5.4.8 Humidity conditioning 5.4.9 Electric strength test 5.7.2.1 Measurement of touch current 6.2.2 Power source circuit classifications 6.2.3 Classification of potential ignition sources 6.2.3.1 Arcing PIS 6.2.3.2 Resistive PIS 28.1.1 Glow-wire test IEC 60884-1:2002+ Amd.1: 2006+Amd. 2: 2013 B.2.5 Input test B.3 Abnormal operating condition tests B.4/6.4.3.3 Single Fault Conditions test Annex Q.1 Circuits intended for interconnection with building wiring (LPS) 24.1 Impact tests IEC 60884-1:2002+ Amd.1: 2006+Amd. 2: 2013 F.3.10 Permanence of markings G.5.3.3 Overload test of Transformers T.8 Stress relief test	Testing location: IMQ S.p.A. – Milano Via Quintiliano, 43 IT-20138 Milano
Summary of compliance with National Differences: - Cenelec Common Modifications (EN); <input checked="" type="checkbox"/> The product fulfils the requirements of EN 62368-1:2014+A11:2017	

Copy of marking plate:

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.



Label put on the package.

TEST ITEM PARTICULARS:	
Classification of use by	<input checked="" type="checkbox"/> Ordinary person <input type="checkbox"/> Instructed person <input checked="" type="checkbox"/> Skilled person <input type="checkbox"/> Children likely to be present
Supply Connection	<input checked="" type="checkbox"/> AC Mains <input type="checkbox"/> DC Mains <input type="checkbox"/> External Circuit - not Mains connected - <input type="checkbox"/> ES1 <input type="checkbox"/> ES2 <input type="checkbox"/> ES3
Supply % Tolerance	<input type="checkbox"/> +10%/-10% <input type="checkbox"/> +20%/-15% <input type="checkbox"/> +____%/ -____% <input checked="" type="checkbox"/> None
Supply Connection – Type	<input type="checkbox"/> pluggable equipment type A - <input type="checkbox"/> non-detachable supply cord <input type="checkbox"/> appliance coupler <input type="checkbox"/> direct plug-in <input type="checkbox"/> mating connector <input type="checkbox"/> pluggable equipment type B - <input type="checkbox"/> non-detachable supply cord <input type="checkbox"/> appliance coupler <input checked="" type="checkbox"/> permanent connection <input type="checkbox"/> mating connector <input type="checkbox"/> other: _____
Considered current rating of protective device as part of building or equipment installation	_____ A; Installation location: <input type="checkbox"/> building; <input checked="" type="checkbox"/> equipment
Equipment mobility.....	<input type="checkbox"/> movable <input type="checkbox"/> hand-held <input type="checkbox"/> transportable <input type="checkbox"/> stationary <input checked="" type="checkbox"/> for building-in <input type="checkbox"/> direct plug-in <input type="checkbox"/> rack-mounting <input type="checkbox"/> wall-mounted
Over voltage category (OVC)	<input type="checkbox"/> OVC I <input type="checkbox"/> OVC II <input checked="" type="checkbox"/> OVC III <input type="checkbox"/> OVC IV <input type="checkbox"/> other: _____
Class of equipment	<input type="checkbox"/> Class I <input checked="" type="checkbox"/> Class II <input type="checkbox"/> Class III
Access location	<input type="checkbox"/> restricted access location <input checked="" type="checkbox"/> N/A
Pollution degree (PD)	<input type="checkbox"/> PD 1 <input checked="" type="checkbox"/> PD 2 <input type="checkbox"/> PD 3
Manufacturer's specified maximum operating ambient.:	0°C ÷ +45°C
IP protection class	<input type="checkbox"/> IPX0 <input type="checkbox"/> IP____
Power Systems	<input type="checkbox"/> TN <input checked="" type="checkbox"/> TT <input type="checkbox"/> IT - ____ V _{L-L}
Altitude during operation (m)	<input checked="" type="checkbox"/> 2000 m or less <input type="checkbox"/> ____ m
Altitude of test laboratory (m)	<input checked="" type="checkbox"/> 2000 m or less <input checked="" type="checkbox"/> 125 m
Mass of equipment (kg)	<input checked="" type="checkbox"/> 35g (approx.)
POSSIBLE TEST CASE VERDICTS:	
- test case does not apply to the test object.....	N/A
- test object does meet the requirement	P (Pass)
- test object does not meet the requirement	F (Fail)

TESTING:	
Date of receipt of test item..... :	12.05.2020, 17.07.2020
Date of acceptance :	12.05.2020, 17.07.2020
Date (s) of performance of tests..... :	28.05.2020 – 07.10.2020
No. Samples tested :	1
No. B.E.M. (ref. IMQ)..... :	99408, 100310 (items sampled and sent by applicant)

GENERAL REMARKS:

"(See Enclosure #)" refers to additional information appended to the report.
 "(See appended table)" refers to a table appended to the report.

Throughout this report a ☐ comma / ☒ point is used as the decimal separator.

This Test Report covers test results for IEC 62368-1: 2014 (Second Edition), and additional results for IEC 60065: 2014 (Eighth Edition) and/or IEC 60950-1: 2005 (Second Edition) + Am 1: 2009 + Am 2: 2013.

Where a requirement in IEC 62368-1 addresses the same requirement/principle in IEC 60065 and/or IEC 60950-1, compliance with the IEC 62368-1 requirements covers compliance with the same requirement/principle in IEC 60065 and/or IEC 60950-1, as indicated.

The complete background/rationale behind the considerations in this TRF is outlined in **108/575/INF**, *IEC TC 108 position related to TRFs associated with the transition of IEC 60065 and IEC 60950-1 to IEC 62368-1*. Use of this TRF is intended to allow for a smooth transition from the legacy standards, IEC 60065 and IEC 60950-1, to the state-of-art requirements for safety of audio/video, information and communication technology equipment, IEC 62368-1.

Unless otherwise stated the uncertainties for the tests and measurements are evaluated in according to IMQ Operational Instruction IO-LAB-001 and IO-LAB-004. The uncertainties evaluation has been carried out in accordance with IEC Guide 115 "Application of Uncertainty of measurement's to Conformity Assessment Activity in the Electrotechnical Sector" and IEC 60950-1: 2005 (Second Edition) + Am 1: 2009 + Am 2: 2013. Internal Procedure PG-037 ensure that the requirements for traceability of calibrations, of all test equipment requiring calibration, and calibration intervals are met. The ability or reliability of this product to perform its intended function in a particular application has not been investigated. Unless otherwise specified, warnings, installation instruction and/or user manual provided with the sample have been checked in Italian or English version only When differences exist; they shall be identified in the General product information section.

Considerations about § 4.4.4 Safeguard robustness and § 6.3 Safeguards against fire under normal operating and abnormal operating conditions:

The USB electronic part is within the scope of the EN 60950-1, but the requirements such as mechanical strength, surface temperature and flammability requirements for the USB part of a mains socket outlet needs to comply with the relevant end-product standard. The end product standard for a socket outlet for building installation, containing mains and USB parts, is IEC 60884-1.

Decision of the OSM-EE Cologne 2016.

Therefore for the mechanical tests it is applied the clause 24 Mechanical strength of the standard IEC 60884-1:2002 Plugs and socket- outlets for household and similar purposes – Part 1: General requirement and Amendment 1: 2006 and Amendment 2: 2013.

Moreover for the safeguard against the fire has been applied the clause 28 "Resistance of insulating material to abnormal heat, to fire and to tracking".

Manufacturer's Declaration per sub-clause 4.2.5 of IEC 60950-1:

The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> Not applicable
---	--

When differences exist; they shall be identified in the General product information section.

Name and address of factory (ies):

	LUMI LEGEND ELECTRICAL Co., LTD No. 18, LANE 239, BEIHAI ROAD, JIANGBEI, NINGBO 315032, P.R. CHINA
--	--

GENERAL PRODUCT INFORMATION:

Product Description –

The EUT is a USB power unit, provided with two USB output, one provided with type "A" connector and one provided with type "C" connector, with a total current of 3.0A. It's designed for a flush mounting. It can be marketed with the following codes:

- 1) Type 4B.AM.USB.30 for Bticino series MATIX (WHITE)
- 2) Type 4B.G14.USB.30 for Gewiss series CHORUS (SILVER)
- 3) Type 4B.G10.USB.30 for Gewiss series CHORUS (WHITE)
- 4) Type 4B.G12.USB.30 for Gewiss series CHORUS (GRAY)
- 5) Type 4B.HC.USB.30 for Bticino series AXOLUTE (SILVER)
- 6) Type 4B.HD.USB.30 for Bticino series AXOLUTE (WHITE)
- 7) Type 4B.HS.USB.30 for Bticino series AXOLUTE (GRAY)
- 8) Type 4B.K.USB.30 for Bticino series LIVING NOW (BLACK, WHITE, SAND)
- 9) Type 4B.L.USB.30 for Bticino series LIVING LIGHT (GRAY)
- 10) Type 4B.N.USB.30 for Bticino series LIVING LIGHT (WHITE)
- 11) Type 4B.NT.USB.30 for Bticino series LIVING LIGHT (SILVER)
- 12) Type 4B.V14.USB.30 for VIMAR series PLANA (WHITE)
- 13) Type 4B.V14SL.USB.30 for VIMAR series PLANA (SILVER)
- 14) Type 4B.V20.USB.30 for VIMAR series EIKON (GRAY)
- 15) Type 4B.V20B.USB.30 for VIMAR series EIKON (WHITE)
- 16) Type 4B.V20N.USB.30 for VIMAR series EIKON (SILVER)
- 17) Type 4B.V19.USB.30 for VIMAR series ARKE' (GRAY)
- 18) Type 4B.V19B.USB.30 for VIMAR series ARKE' (WHITE)

Model Differences –

See above.

Additional application considerations – (Considerations used to test a component or sub-assembly) –

/

Conditions of acceptability :

- Ambient operating temperature 45°C.
- Flush mounting equipment.
- The protection of the power cables must be evaluated in the final installation.
- The EUT is in conformity with the relevant standard if installed with the certified accessories Matix, Chorus, Axolute, Living Light, Plana, Eikon, Arké.
- Thermal requirements when the EUT is placed in a flush-mounting box must be re-evaluated.
- Safeguards against entry of foreign objects must be re-evaluated in the final installation.
- Overcurrent protection device installed in the building: 16A.
- The wall in the installation is considered the fire enclosure, it must be verified in the final installation.
- The appliance must be installed away from heat sources.
- The compliance of the wire with the IEC 60332-1-2 standard if of section 0.5 mm² or higher and IEC 60332-2-2 if the section is less than 0.5 mm², must be evaluated in the final installation.
- Test procedure for routine tests must be evaluated during the inspection visit at the manufacturer.

ENERGY SOURCE IDENTIFICATION AND CLASSIFICATION TABLE:	
(Note 1: Identify the following six (6) energy source forms based on the origin of the energy.) (Note 2: The identified classification e.g., ES2, TS1, should be with respect to its ability to cause pain or injury on the body or its ability to ignite a combustible material. Any energy source can be declared Class 3 as a worse case classification e.g. PS3, ES3.	
Electrically-caused injury (Clause 5): (Note: Identify type of source, list sub-assembly or circuit designation and corresponding energy source classification) Example: +5 V dc input ES1	
Source of electrical energy	Corresponding classification (ES)
Primary circuit	ES3
USB Output	ES1
Electrically-caused fire (Clause 6): (Note: List sub-assembly or circuit designation and corresponding energy source classification) Example: Battery pack (maximum 85 watts): PS2	
Source of power or PIS	Corresponding classification (PS)
Power supply	PS3
USB output	PS1
Injury caused by hazardous substances (Clause 7) (Note: Specify hazardous chemicals, whether produces ozone or other chemical construction not addressed as part of the component evaluation.) Example: Liquid in filled component Glycol	
Source of hazardous substances	Corresponding chemical
There are no dangerous substances covered by this paragraph.	N/A
Mechanically-caused injury (Clause 8) (Note: List moving part(s), fan, special installations, etc. & corresponding MS classification based on Table 35.) Example: Wall mount unit MS2	
Source of kinetic/mechanical energy	Corresponding classification (MS)
Sharp edges and corners	MS1
Flush mounting	MS1
Thermal burn injury (Clause 9) (Note: Identify the surface or support, and corresponding energy source classification based on type of part, location, operating temperature and contact time in Table 38.) Example: Hand-held scanner – thermoplastic enclosure TS1	
Source of thermal energy	Corresponding classification (TS)
Accessible plastic part (front cover)	TS1
Radiation (Clause 10) (Note: List the types of radiation present in the product and the corresponding energy source classification.) Example: DVD – Class 1 Laser Product RS1	
Type of radiation	Corresponding classification (RS)
N/A	N/A
ENERGY SOURCE DIAGRAM	
Indicate which energy sources are included in the energy source diagram. Insert diagram below	
<input checked="" type="checkbox"/> ES <input checked="" type="checkbox"/> PS <input checked="" type="checkbox"/> MS <input checked="" type="checkbox"/> TS <input type="checkbox"/> RS	

OVERVIEW OF EMPLOYED SAFEGUARDS				
Clause	Possible Hazard			
5.1	Electrically-caused injury			
Body Part (e.g. Ordinary)	Energy Source (ES3: Primary Filter circuit)	Safeguards		
		Basic	Supplementary	Reinforced (Enclosure)
Ordinary (after installation)	ES3: mains primary circuit, covered by the enclosure and installed inside the wall.	N/A	N/A	Wall, enclosure
Ordinary (after installation)	ES1: output terminals	N/A	N/A	N/A
6.1	Electrically-caused fire			
Material part (e.g. mouse enclosure)	Energy Source (PS2: 100 Watt circuit)	Safeguards		
		Basic	Supplementary	Reinforced
Power supply	PS3	/	N/A	P
USB output	PS1	/	/	/
7.1	Injury caused by hazardous substances			
Body Part (e.g., skilled)	Energy Source (hazardous material)	Safeguards		
		Basic	Supplementary	Reinforced
/	/	N/A	N/A	N/A
/	/	/	/	/
8.1	Mechanically-caused injury			
Body Part (e.g. Ordinary)	Energy Source (MS3:High Pressure Lamp)	Safeguards		
		Basic	Supplementary	Reinforced (Enclosure)
Ordinary	MS1 Sharp edges and corners	N/A	N/A	N/A
Ordinary	MS1 flush mounting	N/A	N/A	N/A
9.1	Thermal Burn			
Body Part (e.g., Ordinary)	Energy Source (TS2)	Safeguards		
		Basic	Supplementary	Reinforced
Ordinary	TS1 Accessible part (Front cover)	N/A	N/A	N/A
10.1	Radiation			
Body Part (e.g., Ordinary)	Energy Source (Output from audio port)	Safeguards		
		Basic	Supplementary	Reinforced
/	/	N/A	N/A	N/A
Supplementary Information:				
(1) See attached energy source diagram for additional details.				
(2) "N" – Normal Condition; "A" – Abnormal Condition; "S" Single Fault				

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict
4	GENERAL REQUIREMENTS		-
4.1.1	Acceptance of materials, components and subassemblies (IEC 60065, 3.4) & (IEC 60950-1, 1.5.1)	(See appended table 4.1.2)	P
4.1.2	Use of components (IEC 60065, 3.4, 14.1) & (IEC 60950-1, 1.5.2)	(See appended table 4.1.2)	P
4.1.3	Equipment design and construction (IEC 60065, 3.1) & (IEC 60950-1, 1.3.2)		P
4.1.15	Markings and instructions..... : (IEC 60065, 5.1) & (IEC 60950-1, 1.7)	(See Annex F)	-
4.4.4	Safeguard robustness	See also "General Remarks" and table 24.1 IEC 60884-1:2002+ Amd.1: 2006+Amd. 2: 2013.	P
4.4.4.2	Steady force tests..... : (IEC 60065, 9.1.1.7 c), 13.3.1) & (IEC 60950-1, 4.2.4)	(See Annex T.4, T.5)	—
4.4.4.3	Drop tests : (IEC 60065, 12.1.5) & (IEC 60950-1, 4.2.6)	(See Annex T.7)	—
4.4.4.4	Impact tests : (IEC 60065, 12.1.4) & (IEC 60950-1, 4.2.5)	(See Annex T.6)	—
4.4.4.5	Internal accessible safeguard enclosure and barrier tests : (IEC 60950-1, 4.2.3)	(See Annex T.3)	—
4.4.4.6	Glass Impact tests..... : (IEC 60065, 19.6) & (IEC 60950-1, 4.2.5)	(See Annex T.9, Annex U)	—
4.4.4.7	Thermoplastic material tests : (IEC 60065, 12.1.6) & (IEC 60950-1, 4.2.7)	(See Annex T.8)	—
4.4.4.8	Air comprising a safeguard..... : (IEC 60065, 9.1.7) & (IEC 60950-1, 4.2)	(See Annex T)	—
4.4.4.9	Accessibility and safeguard effectiveness (IEC 60065, 9.1.7) & (IEC 60950-1, 4.2.1)		P
4.5	Explosion	No risk of explosion.	N/A
4.6	Fixing of conductors (IEC 60065, 8.14) & (IEC 60950-1, 3.1.9)		-
4.6.1	Fix conductors not to defeat a safeguard (IEC 60065, 8.14) & (IEC 60950-1, 3.1.9)	Mains connector.	P
4.6.2	10 N force test applied to : (IEC 60065, 8.14) & (IEC 60950-1, 3.1.9)		—
4.7	Equipment for direct insertion into mains socket – outlets (IEC 60065, 15.4) & (IEC 60950-1, 4.3.6)		N/A

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict
4.7.2	Mains plug part complies with the relevant standard..... : (IEC 60065, 15.4.2) & (IEC 60950-1, 4.3.6)		—
4.7.3	Torque (Nm) : (IEC 60065, 15.4.1) & (IEC 60950-1, 4.3.6)		—
4.8	Products containing coin/button cell batteries (IEC 60065, 12.7)	Not provided.	N/A
4.8.2	Instructional safeguard (IEC 60065, 5.4 c), 5.5.2 j))		N/A
4.8.3	Battery Compartment Construction (IEC 60065, 12.7.2)		N/A
	Means to reduce the possibility of children removing the battery..... :		—
4.8.4	Battery Compartment Mechanical Tests : (IEC 60065, 12.7.3)	(See Table 4.8.4)	—
4.8.5	Battery Accessibility (IEC 60065, 12.7.4)		N/A
4.9	Likelihood of fire or shock due to entry of conductive object..... : (IEC 60065, 9.1.3, 20.3.2) & (IEC 60950-1, 4.6.1)	(See Annex P)	—

5	ELECTRICALLY-CAUSED INJURY		-
5.2.1	Electrical energy source classifications :	ES3: mains primary circuit, covered by the enclosure and installed inside the wall. ES1: output terminals	—
5.2.2	ES1, ES2 and ES3 limits	USB terminals ES1	P
5.2.2.2	Steady-state voltage and current : (IEC 60065, 9.1.1.2) & (IEC 60950-1, 2.2, 2.3, 2.4)	(See appended table 5.2)	—
5.2.2.3	Capacitance limits..... : (IEC 60065, 9.1.1.2) & (IEC 60950-1, 2.4)	(See appended table 5.2)	—
5.2.2.4	Single pulse limits : (IEC 60950-1, 2.2)	(See appended table 5.2)	—
5.2.2.5	Limits for repetitive pulses : (IEC 60950-1, 2.2)	(See appended table 5.2)	—
5.2.2.6	Ringing signals : (IEC 60950-1, 2.3, Annex M)	(See Annex H)	—
5.2.2.7	Audio signals : (IEC 60065, 9.1.1.2) & (IEC 60950-1, 2.1.1.9)	(See Clause E.1)	—
5.3	Protection against electrical energy sources (IEC 60065, 9.1.1) & (IEC 60950-1, 2.1)		P

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict
5.3.1	General Requirements for accessible parts to ordinary, instructed and skilled persons (IEC 60065, 9.1.1) & (IEC 60950-1, 2.1)	USB output terminals accessible to ordinary persons.	P
5.3.2.1	Accessibility to electrical energy sources and safeguards (IEC 60065, 9.1.1.3, 9.1.2, 9.1.3, 9.1.4, 9.1.5) & (IEC 60950-1, 2.1.1.1)		P
5.3.2.2	Contact requirements (IEC 60065, 9.1.1.1) & (IEC 60950-1, 2.1.1.1)	See also "Conditions of acceptability".	N/A
	a) Test with test probe from Annex V..... :		—
	b) Electric strength test potential (V)..... :		—
	c) Air gap (mm)..... :		—
5.3.2.4	Terminals for connecting stripped wire (IEC 60065, 9.1.1.4)		N/A
5.4	Insulation materials and requirements		-
5.4.1.2	Properties of insulating material (IEC 60065, 8.3) & (IEC 60950-1, 2.9.1)		P
5.4.1.3	Humidity conditioning..... : (IEC 60065, 10.3) (IEC 60950-1, 2.9.1)	No hygroscopic material. (See sub-clause 5.4.8)	—
5.4.1.4	Maximum operating temperature for insulating materials..... : (IEC 60065, 7.1) & (IEC 60950-1, 4.5)	(See appended table 5.4.1.4)	P
5.4.1.5	Pollution degree..... : (IEC 60065, 13.1) & (IEC 60950-1, 2.10.1.2)	Pollution degree 2	—
5.4.1.5.2	Test for pollution degree 1 environment and for an insulating compound (IEC 60065, 13.6, 13.7) & (IEC 60950-1, 2.10.10)		N/A
5.4.1.5.3	Thermal cycling (IEC 60065, 13.6) & (IEC 60950-1, 2.10.9)		N/A
5.4.1.6	Insulation in transformers with varying dimensions (IEC 60065, 13.2) & (IEC 60950-1, 2.10.1.5)		N/A
5.4.1.7	Insulation in circuits generating starting pulses (IEC 60950-1, 2.10.3.5)		N/A
5.4.1.8	Determination of working voltage (IEC 60065, 13.2) & (IEC 60950-1, 2.10.2)	Measures performed. Max. working voltage 482Vpk, 253Vrms	P
5.4.1.9	Insulating surfaces (IEC 60065, 13.3.1) & (IEC 60950-1, 2.10.3.1)	Considered.	P
5.4.1.10	Thermoplastic parts on which conductive metallic parts are directly mounted (IEC 60065, 7.2) & (IEC 60950-1, 4.5.5)		P

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.1.10.2	Vicat softening temperature..... : (IEC 60065, 7.2)	(See appended table 5.4.1.10.2)	—
5.4.1.10.3	Ball pressure : (IEC 60950-1, 4.5.5)	(See appended table 5.4.1.10.3)	—
5.4.2	Clearances (IEC 60065, 13.3, Annex J) & (IEC 60950-1, 2.10.3, Annex G)	Altitude: 2000m	P
5.4.2.2	Determining clearance using peak working voltage	(See appended table 5.4.2.2)	P
5.4.2.3	Determining clearance using required withstand voltage :	(See appended table 5.4.2.3)	P
	a) a.c. mains transient voltage :	4000Vpk See the Conditions of acceptability.	—
	b) d.c. mains transient voltage :		—
	c) external circuit transient voltage..... :		—
	d) transient voltage determined by measurement :		—
5.4.2.4	Determining the adequacy of a clearance using an electric strength test	(See appended table 5.4.2.4)	N/A
5.4.2.5	Multiplication factors for clearances and test voltages :		—
5.4.3	Creepage distances : (IEC 60065, 13.4) & (IEC 60950-1, 2.10.4)	(See appended table 5.4.3)	—
5.4.3.1	General		P
5.4.3.3	Material Group : (IEC 60065, 13.4) & (IEC 60950-1, 2.10.4.2)	IIIa or IIIb considered.	—
5.4.4	Solid insulation (IEC 60065, 8.8) & (IEC 60950-1, 2.10.5)		P
5.4.4.2	Minimum distance through insulation : (IEC 60065, 8.8) & (IEC 60950-1, 2.10.5.2)	(See appended table 5.4.4.2)	P
5.4.4.3	Insulation compound forming solid insulation (IEC 60065, 13.6, 13.7, 13.8) & (IEC 60950-1, 2.10.5.3)		N/A
5.4.4.4	Solid insulation in semiconductor devices (IEC 60065, 13.6, 13.8) & (IEC 60950-1, 2.10.5.4)		N/A
5.4.4.5	Cemented joints (IEC 60065, 13.6) & (IEC 60950-1, 2.10.5.5)		N/A
5.4.4.6	Thin sheet material (IEC 60065, 8.8) & (IEC 60950-1, 2.10.5.6)		N/A
5.4.4.6.1	General requirements (IEC 60065, 8.8)		N/A
5.4.4.6.2	Separable thin sheet material (IEC 60065, 8.8) & (IEC 60950-1, 2.10.5.7)		N/A
	Number of layers (pcs) :		—

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.4.6.3	Non-separable thin sheet material (IEC 60065, 8.21) & (IEC 60950-1, 2.10.5.8)		N/A
5.4.4.6.4	Standard test procedure for non-separable thin sheet material : (IEC 60950-1, 2.10.5.9)	(See appended Table 5.4.9)	—
5.4.4.6.5	Mandrel test (IEC 60065, 8.21) & (IEC 60950-1, Annex AA)		N/A
5.4.4.7	Solid insulation in wound components (IEC 60065, 8.16) & (IEC 60950-1, 2.10.5.11)	(See appended table 5.4.4.2)	P
5.4.4.9	Solid insulation at frequencies >30 kHz :	(See appended Table 5.4.4.9)	—
5.4.5	Antenna terminal insulation (IEC 60065, 10.2) & (IEC 60950-1, 7.4)		N/A
5.4.5.1	General		N/A
5.4.5.2	Voltage surge test (IEC 60065, 10.2) & (IEC 60950-1, 7.4.2)		N/A
	Insulation resistance (MΩ) :		—
5.4.6	Insulation of internal wire as part of supplementary safeguard : (IEC 60065, 8.9) & (IEC 60950-1, 2.1.1.3)	(See appended table 5.4.4.2)	—
5.4.7	Tests for semiconductor components and for cemented joints (IEC 60065, 13.6, 13.7, 13.8) & (IEC 60950-1, 2.10.11)		N/A
5.4.8	Humidity conditioning (IEC 60065, 10.3) & (IEC 60950-1, 2.9.2)		P
	Relative humidity (%) :	93%	—
	Temperature (°C) :	30°C	—
	Duration (h) :	48h	—
5.4.9	Electric strength test : (IEC 60065, 10.4) & (IEC 60950-1, 5.2)	(See appended table 5.4.9)	—
5.4.9.1	Test procedure for a solid insulation type test (IEC 60065, 10.4) & (IEC 60950-1, 5.2)		P
5.4.9.2	Test procedure for routine tests (IEC 60065, N.3.2) & (IEC 60950-1, 5.2.2)	See "Conditions of acceptability".	P
5.4.10	Protection against transient voltages between external circuit (IEC 60065, Annex B) & (IEC 60950-1, 6.2)		N/A
5.4.10.1	Parts and circuits separated from external circuits (IEC 60950-1, 6.2.1)	(See appended table 5.4.9)	N/A
5.4.10.2	Test methods (IEC 60950-1, 6.2.2)		N/A
5.4.10.2.1	General		N/A

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.10.2.2	Impulse test : (IEC 60950-1, 6.2.2.1)	(See appended table 5.4.9)	—
5.4.10.2.3	Steady-state test : (IEC 60950-1, 6.2.2.2)	(See appended table 5.4.9)	—
5.4.11	Insulation between external circuits and earthed circuitry : (IEC 60065, Annex B) & (IEC 60950-1, 6.1)	(See appended table 5.4.9)	—
5.4.11.1	Exceptions to separation between external circuits and earth (IEC 60950-1, 6.1.2.2)		N/A
5.4.11.2	Requirements (IEC 60950-1, 6.1.2.1)		N/A
	Rated operating voltage U_{op} (V) :		—
	Nominal voltage U_{peak} (V) :		—
	Max increase due to variation U_{sp} :		—
	Max increase due to ageing ΔU_{sa} :		—
	$U_{op} = U_{peak} + \Delta U_{sp} + \Delta U_{sa}$:		—
5.5	Components as safeguards		-
5.5.1	General		P
5.5.2	Capacitors and RC units (IEC 60065, 14.3)	Capacitor CY1 and CY2 across ES3 and ES1: class capacitor Y1. See Table 4.1.2 List of critical components.	P
5.5.2.1	General requirement (IEC 60065, 14.3) & (IEC 60950-1, 1.5.6)		N/A
5.5.2.2	Safeguards against capacitor discharge after disconnection of a connector : (IEC 60065, 9.1.6) & (IEC 60950-1, 2.1.1.7)	No capacitor before the bridge on primary circuit. (See appended table 5.5.2.2)	—
5.5.3	Transformers (IEC 60065, 14.4) & (IEC 60950-1, 1.5.4, Annex C)	(See Annex G.5.3)	P
5.5.4	Optocouplers (IEC 60065, 14.12) & (IEC 60950-1, 2.10.5.3, 2.10.5.4)	(See sub-clause 5.4 or Annex G.12)	N/A
5.5.5	Relays	(See Annex G.2)	N/A
5.5.6	Resistors (IEC 60065, 14.2) & (IEC 60950-1, 1.5.7)	(See Annex G.10)	N/A
5.5.7	SPD's (IEC 60065, 14.13) & (IEC 60950-1, 1.5.9)	(See Annex G.8)	N/A
5.5.7.1	Use of an SPD connected to reliable earthing (IEC 60065, 14.13) & (IEC 60950-1, 1.5.9.4)		N/A

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict
5.5.7.2	Use of an SPD between mains and protective earth (IEC 60065, 14.13) & (IEC 60950-1, 1.5.9.4)		N/A
5.5.8	Insulation between the mains and external circuit consisting of a coaxial cable..... : (IEC 60065, 10.2) & (IEC 60950-1, 1.5.7.3, 7.4)	(See Annex G.10.3)	—
5.6	Protective conductor		-
5.6.2	Requirement for protective conductors (IEC 60065, 15.2) & (IEC 60950-1, 2.6.3, 2.6.5)	Class II appliance.	N/A
5.6.2.1	General requirements		N/A
5.6.2.2	Colour of insulation (IEC 60065, 15.2) & (IEC 60950-1, 2.6.3.5)		N/A
5.6.3	Requirement for protective earthing conductors (IEC 60065, 15.2) & (IEC 60950-1, 2.6.3.2)		N/A
	Protective earthing conductor size (mm ²) :		—
5.6.4	Requirement for protective bonding conductors		N/A
5.6.4.1	Protective bonding conductors (IEC 60950-1, 2.6.3.3)		N/A
	Protective bonding conductor size (mm ²)..... :		—
	Protective current rating (A) :		—
5.6.4.3	Current limiting and overcurrent protective devices (IEC 60950-1, 2.6.5.2)		N/A
5.6.5	Terminals for protective conductors		N/A
5.6.5.1	Requirement (IEC 60065, 15.2) & (IEC 60950-1, 2.6.4.2)		N/A
	Conductor size (mm ²), nominal thread diameter (mm). :		—
5.6.5.2	Corrosion (IEC 60065, 15.2) & (IEC 60950-1, 2.6.5.6)		N/A
5.6.6	Resistance of the protective system (IEC 60065, 15.2) & (IEC 60950-1, 2.6.3.4)		N/A
5.6.6.1	Requirements (IEC 60065, 15.2) & (IEC 60950-1, 2.6.3.4)		N/A
5.6.6.2	Test Method Resistance (Ω) : (IEC 60065, 15.2) & (IEC 60950-1, 2.6.3.4)	(See appended table 5.6.6.2)	—
5.6.7	Reliable earthing (IEC 60065, 14.13) & (IEC 60950-1, 1.5.9.4, 5.1.7.1)		N/A
5.7	Prospective touch voltage, touch current and protective conductor current		-
5.7.2	Measuring devices and networks		P

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict
5.7.2.1	Measurement of touch current: (IEC 60065, 9.1.1.2) & (IEC 60950-1, 5.1.4)		—
5.7.2.2	Measurement of prospective touch voltage (IEC 60065, 9.1.1.2) & (IEC 60950-1, 1.4.9)	(See appended table 5.7.2.2)	P
5.7.3	Equipment set-up, supply connections and earth connections (IEC 60065, 9.1.1.2) & (IEC 60950-1, 5.1.3)		N/A
	System of interconnected equipment (separate connections/single connection):		—
	Multiple connections to mains (one connection at a time/simultaneous connections).....:		—
5.7.4	Earthed conductive accessible parts.....: (IEC 60065, 9.1.1.2) & (IEC 60950-1, 5.1.6)	(See appended Table 5.7.4)	N/A
5.7.5	Protective conductor current (IEC 60950-1, 5.1.7)		N/A
	Supply Voltage (V):		—
	Measured current (mA):		—
	Instructional Safeguard:	(See F.4 and F.5)	—
5.7.6	Prospective touch voltage and touch current due to external circuits (IEC 60950-1, 5.1.8)		N/A
5.7.6.1	Touch current from coaxial cables		N/A
5.7.6.2	Prospective touch voltage and touch current from external circuits (IEC 60950-1, 5.1.8.1)		N/A
5.7.7	Summation of touch currents from external circuits (IEC 60950-1, 5.1.8.2)		N/A
	a) Equipment with earthed external circuits Measured current (mA):		—
	b) Equipment whose external circuits are not referenced to earth. Measured current (mA).....:		—

6	ELECTRICALLY- CAUSED FIRE		-
6.2	Classification of power sources (PS) and potential ignition sources (PIS)		-
6.2.2	Power source circuit classifications	Power supply classified as PS3.	P
6.2.2.1	General		P
6.2.2.2	Power measurement for worst-case load fault ... : (IEC 60065, 4.3.1) & (IEC 60950-1, 2.5)	(See appended table 6.2.2)	—
6.2.2.3	Power measurement for worst-case power source fault..... : (IEC 60065, 4.3.1) & (IEC 60950-1, 2.5)	(See appended table 6.2.2)	—

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict
6.2.2.4	PS1	USB output classified as PS1. (See appended table 6.2.2)	—
6.2.2.5	PS2	No such circuit . (See appended table 6.2.2)	—
6.2.2.6	PS3	Power supply classified as PS3.	—
6.2.3	Classification of potential ignition sources		P
6.2.3.1	Arcing PIS	Arcing PIS present only on primary circuit (PS3). (See also appended table 6.2.3.1)	—
6.2.3.2	Resistive PIS	No resistive PIS. (See appended table 6.2.3.2)	—
6.3	Safeguards against fire under normal operating and abnormal operating conditions		P
6.3.1 (a)	No ignition and attainable temperature value less than 90 % defined by ISO 871 or less than 300 °C for unknown materials (IEC 60065, 7.1) & (IEC 60950-1, 4.5.3)	(See appended table 5.4.1.4, 6.3.2, 9.0, B.2.6)	—
6.3.1 (b)	Combustible materials outside fire enclosure (IEC 60950-1, 4.7.3.3)	See also "General Remarks" and table 28.1.1 IEC 60884-1:2002+ Amd.1: 2006+Amd. 2: 2013.	P
6.4	Safeguards against fire under single fault conditions		P
6.4.1	Safeguard Method (IEC 60950-1, 4.7.1)	Equipment permanently connected. <4000W. Overcurrent protection on device (2A) and installed in the building: 16A.	P
6.4.2	Reduction of the likelihood of ignition under single fault conditions in PS1 circuits	Secondary circuit classified as PS1 primary circuit classified as PS3.	N/A
6.4.3	Reduction of the likelihood of ignition under single fault conditions in PS2 and PS3 circuits (IEC 60065, 11.2, 20.2)		-
6.4.3.1	General		P
6.4.3.2	Supplementary Safeguards (IEC 60065, 20.2)	Primary fuse provided. PCB with flame class 94V-0. See Table 4.1.2.	P
	Special conditions if conductors on printed boards are opened or peeled		N/A
6.4.3.3	Single Fault Conditions..... (IEC 60065, 11.2)	(See appended table B.4)	—
	Special conditions for temperature limited by fuse		N/A
6.4.4	Control of fire spread in PS1 circuits	Secondary circuit classified as PS1.	P
6.4.5	Control of fire spread in PS2 circuits (IEC 60950-1, 4.7.3.4)		N/A
6.4.5.2	Supplementary safeguards (IEC 60950-1, 4.7.3.4)	(See appended tables 4.1.2 and Annex G)	—

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict
6.4.6	Control of fire spread in PS3 circuit (IEC 60950-1, 4.7.3.4)	All located parts inside the fire enclosure are rated V-2 or better. See also Table 4.1.2.	P
6.4.7	Separation of combustible materials from a PIS (IEC 60065, 20.2.5) & (IEC 60950-1, 4.7.3.4)		N/A
6.4.7.1	General..... :	(See tables 6.2.3.1 and 6.2.3.2)	—
6.4.7.2	Separation by distance (IEC 60065, 20.2.5) & (IEC 60950-1, 4.7.3.4)		N/A
6.4.7.3	Separation by a fire barrier (IEC 60065, 20.2.5) & (IEC 60950-1, 4.7.3.4)		N/A
6.4.8	Fire enclosures and fire barriers (IEC 60065, 20.2.5, 20.3) & (IEC 60950-1, 4.7.2, 4.7.3)	USB power unit is an EUT for household and similar fixed-electrical installations. It's a flush mounting equipment. The wall in the installation is considered the fire enclosure. See "Conditions of acceptability".	N/A
6.4.8.1	Fire enclosure and fire barrier material properties (IEC 60065, 20.2.5, 20.3) & (IEC 60950-1, 4.7.3.2, 4.7.3.4)		N/A
6.4.8.2.1	Requirements for a fire barrier (IEC 60065, 20.2.5) & (IEC 60950-1, 4.7.3.4)		N/A
6.4.8.2.2	Requirements for a fire enclosure (IEC 60065, 20.3) & (IEC 60950-1, 4.7.3.2)		N/A
6.4.8.3	Constructional requirements for a fire enclosure and a fire barrier		N/A
6.4.8.3.1	Fire enclosure and fire barrier openings (IEC 60065, 20.3) & (IEC 60950-1, 4.6.1, 4.6.2)		N/A
6.4.8.3.2	Fire barrier dimensions (IEC 60065, 20.2.5) & (IEC 60950-1, 4.6.2)		N/A
6.4.8.3.3	Top Openings in Fire Enclosure: dimensions (mm) : (IEC 60065, 20.3) & (IEC 60950-1, 4.6.1)		—
	Needle Flame test		N/A
6.4.8.3.4	Bottom Openings in Fire Enclosure, condition met a), b) and/or c) dimensions (mm) : (IEC 60065, 20.3) & (IEC 60950-1, 4.6.2)		—
	Flammability tests for the bottom of a fire enclosure :		—
6.4.8.3.5	Integrity of the fire enclosure, condition met: a), b) or c) : (IEC 60950-1, 4.6.3)		—

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict
6.4.8.4	Separation of PIS from fire enclosure and fire barrier distance (mm) or flammability rating: (IEC 60065, 20.2.5) & (IEC 60950-1, 4.7.3.1, 4.7.3.2)		—
6.5	Internal and external wiring		-
6.5.1	Requirements (IEC 60065, 16.3, 20.2.3) & (IEC 60950-1, 4.7.3.3, 4.7.3.4)	See the instruction sheet. See also the Conditions of acceptability.	P
6.5.2	Cross-sectional area (mm ²):		—
6.5.3	Requirements for interconnection to building wiring: (IEC 60950-1, 2.5, 6.3)	(See Annex Q.)	—
6.6	Safeguards against fire due to connection to additional equipment (IEC 60950-1, 3.5.4)	USB output classified as PS1.	P
	External port limited to PS2 or complies with Clause Q.1		P

7	INJURY CAUSED BY HAZARDOUS SUBSTANCES		-
7.2	Reduction of exposure to hazardous substances		N/A
7.3	Ozone exposure (IEC 60950-1, 1.7.2.6)		N/A
7.4	Use of personal safeguards (PPE)		N/A
	Personal safeguards and instructions:		—
7.5	Use of instructional safeguards and instructions		N/A
	Instructional safeguard (ISO 7010):		—
7.6	Batteries: (IEC 60065, 14.10) & (IEC 60950-1, 4.3.8)	(See Annex M)	—

8	MECHANICALLY-CAUSED INJURY		-
8.1	General		P
8.2	Mechanical energy source classifications	MS1: device installed at a height of less than 2 m. See instruction sheet.	P
8.3	Safeguards against mechanical energy sources	Considered.	P
8.4	Safeguards against parts with sharp edges and corners (IEC 60065, 19.5) & (IEC 60950-1, 4.3.1)		P
8.4.1	Safeguards (IEC 60950-1, 4.3.1)	MS1	N/A
8.5	Safeguards against moving parts	No moving parts.	N/A

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict
8.5.1	MS2 or MS3 part required to be accessible for the function of the equipment (IEC 60065, 14.10.3) & (IEC 60950-1, 4.4)		N/A
8.5.2	Instructional Safeguard : (IEC 60950-1, 4.4.5.2)		—
8.5.4	Special categories of equipment comprising moving parts		N/A
8.5.4.1	Large data storage equipment (IEC 60950-23)		N/A
8.5.4.2	Equipment having electromechanical device for destruction of media (IEC 60950-1, Annex EE)		N/A
8.5.4.2.1	Safeguards and Safety Interlocks : (IEC 60950-1, EE.3)	(See Annex F.4 and Annex K)	—
8.5.4.2.2	Instructional safeguards against moving parts		N/A
	Instructional Safeguard : (IEC 60950-1, EE.2)		—
8.5.4.2.3	Disconnection from the supply (IEC 60950-1, EE.4)		N/A
8.5.4.2.4	Probe type and force (N) : (IEC 60950-1, EE.5)		—
8.5.5	High Pressure Lamps (IEC 60950-1, 4.2.9)		N/A
8.5.5.1	Energy Source Classification		N/A
8.5.5.2	High Pressure Lamp Explosion Test..... : (IEC 60950-1, 4.2.9.2)	(See appended table 8.5.5.2)	—
8.6	Stability (IEC 60065, 19) & (IEC 60950-1, 4.1)	MS1; flush-mounting device. Not installed by ordinary person.	N/A
8.6.1	Product classification		N/A
	Instructional Safeguard : (IEC 60065, 5.5.2)		—
8.6.2	Static stability (IEC 60065, 19.1) & (IEC 60950-1, 4.1)		N/A
8.6.2.2	Static stability test (IEC 60065, 19.2) & (IEC 60950-1, 4.1)		N/A
	Applied Force : (IEC 60065, 19.2.2)		—
8.6.2.3	Downward Force Test (IEC 60065, 19.3) & (IEC 60950-1, 4.1)		N/A
8.6.3	Relocation stability test (IEC 60065, 19.2)		N/A
	Unit configuration during 10° tilt..... : (IEC 60065, 19.2.3)		—
8.6.4	Glass slide test		N/A

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict
8.6.5	Horizontal force test (Applied Force)..... : (IEC 60065, 19.4)		—
	Position of feet or movable parts..... : (IEC 60065, 19.4)		—
8.7	Equipment mounted to wall or ceiling (IEC 60065, 19.7) & (IEC 60950-1, 4.2.10)	The equipment is designed for flush mounting. The evaluation of the wall fixing frame must be done in the final installation	N/A
8.7.1	Mounting Means (Length of screws (mm) and mounting surface) : (IEC 60065, 19.7)		—
8.7.2	Direction and applied force..... : (IEC 60065, 19.7) & (IEC 60950-1, 4.2.10)		—
8.8	Handles strength		N/A
8.8.1	Classification		N/A
8.8.2	Applied Force : (IEC 60065, 19.7)		—
8.9	Wheels or casters attachment requirements		N/A
8.9.1	Classification		N/A
8.9.2	Applied force : (IEC 60065, 19.7)		—
8.10	Carts, stands and similar carriers		N/A
8.10.1	General		N/A
8.10.2	Marking and instructions		N/A
	Instructional Safeguard..... : (IEC 60065, 19.7)		—
8.10.3	Cart, stand or carrier loading test and compliance		N/A
	Applied force : (IEC 60065, 19.7)		—
8.10.4	Cart, stand or carrier impact test		N/A
8.10.5	Mechanical stability		N/A
	Applied horizontal force (N) : (IEC 60065, 19.7)		—
8.10.6	Thermoplastic temperature stability (°C)..... : (IEC 60065, 19.7)		—
8.11	Mounting means for rack mounted equipment (IEC 60950-1, Annex DD)	No rack mounting.	N/A
8.11.1	General (IEC 60950-1, DD.1)		N/A
8.11.2	Product Classification		N/A
8.11.3	Mechanical strength test, variable <i>N</i> : (IEC 60950-1, DD.2)		—
8.11.4	Mechanical strength test 250N, including end stops (IEC 60950-1, DD.3)		N/A
8.12	Telescoping or rod antennas..... : (IEC 60065, 12.6)	Not provided. (See Annex T)	—
	Button/Ball diameter (mm)..... : (IEC 60065, 12.6)		—

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2

Clause	Requirement + Test	Result - Remark	Verdict
--------	--------------------	-----------------	---------

9	THERMAL BURN INJURY		-
9.2	Thermal energy source classifications (IEC 60065, 7.1, 11.2) & (IEC 60950-1, 4.5.4)	Accessible part is considered the front cover. Accessible part classified as TS1. See Table 5.4.1.4.	P
9.3	Safeguard against thermal energy sources (IEC 60065, 7.1, 11.2) & (IEC 60950-1, 4.5.4)		N/A
9.4	Requirements for safeguards		-
9.4.1	Equipment safeguard (IEC 60065, 7.1, 11.2) & (IEC 60950-1, 4.5.4)		N/A
9.4.2	Instructional safeguard : (IEC 60065, 7.1, 11.2) & (IEC 60950-1, 4.5.4)		—

10	RADIATION		-
10.2	Radiation energy source classification		N/A
10.2.1	General classification		N/A
10.3	Protection against laser radiation (IEC 60065, 6.2) & (IEC 60950-1, 4.3.13.5.1)		N/A
	Laser radiation that exists equipment..... :		—
	Normal, abnormal, single-fault :	(See attached laser test report)	—
	Instructional safeguard :		—
	Tool..... :		—
10.4	Protection against visible, infrared, and UV radiation (IEC 60065, 6.3) & (IEC 60950-1, 4.3.13.4, 4.3.13.5.2)		N/A
10.4.1	General		N/A
10.4.1.a)	RS3 for Ordinary and instructed persons :		—
10.4.1.b)	RS3 accessible to a skilled person..... :		—
	Personal safeguard (PPE) instructional safeguard :		—
10.4.1.c)	Equipment visible, IR, UV does not exceed RS1 :		—
10.4.1.d)	Normal, abnormal, single-fault conditions :	(See appended table B.3 & B.4)	—
10.4.1.e)	Enclosure material employed as safeguard is opaque..... :		—
10.4.1.f)	UV attenuation..... :		—
10.4.1.g)	Materials resistant to degradation UV :		—
10.4.1.h)	Enclosure containment of optical radiation :		—

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict
10.4.1.i)	Exempt Group under normal operating conditions		—
10.4.2	Instructional safeguard		—
10.5	Protection against x-radiation (IEC 60065, 6.1) & (IEC 60950-1, 4.3.13.2)		N/A
10.5.1	X- radiation energy source that exists equipment :	(See appended table B.3 & B.4)	—
	Normal, abnormal, single fault conditions		N/A
	Equipment safeguards		—
	Instructional safeguard for skilled person.....		—
10.5.3	Most unfavourable supply voltage to give maximum radiation		—
	(IEC 60950-1, Annex H)		
	Abnormal and single-fault condition	(See appended table B.3 & B.4)	—
	Maximum radiation (pA/kg)		—
10.6	Protection against acoustic energy sources		N/A
10.6.1	General		N/A
10.6.2	Classification		N/A
	Acoustic output, dB(A).....		—
	Output voltage, unweighted r.m.s.....		—
10.6.4	Protection of persons		N/A
	Instructional safeguards		—
	Equipment safeguard prevent ordinary person to RS2.....		—
	Means to actively inform user of increase sound pressure.....		—
	Equipment safeguard prevent ordinary person to RS2.....		—
10.6.5	Requirements for listening devices (headphones, earphones, etc.)		N/A
10.6.5.1	Corded passive listening devices with analogue input		N/A
	Input voltage with 94 dB(A) LAeq acoustic pressure output.....		—
10.6.5.2	Corded listening devices with digital input		N/A
	Maximum dB(A).....		—
10.6.5.3	Cordless listening device		N/A
	Maximum dB(A).....		—

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict
B	NORMAL OPERATING CONDITION TESTS, ABNORMAL OPERATING CONDITION TESTS AND SINGLE FAULT CONDITION TESTS		-
B.2	Normal Operating Conditions		P
B.2.1	General requirements..... : (IEC 60065, 4.2.1) & (IEC 60950-1, 1.4.4)	(See Test Item Particulars and appended test tables)	—
	Audio Amplifiers and equipment with audio amplifiers : (IEC 60065, 4.2.5) & (IEC 60950-1, 4.4)	(See Annex E)	—
B.2.3	Supply voltage and tolerances (IEC 60065, 4.2.2) & (IEC 60950-1, 1.4.5)	Considered.	P
B.2.5	Input test..... : (IEC 60065, 4.2, 5.2 g), h)) & (IEC 60950-1, 1.6.2)	(See appended table B.2.5)	—
B.3	Simulated abnormal operating conditions		P
B.3.1	General requirements..... : (IEC 60065, 4.3) & (IEC 60950-1, 5.3.1)	(See appended table B.3)	—
B.3.2	Covering of ventilation openings (IEC 60065, 4.3.11) & (IEC 60950-1, 5.3.1)	The equipment has been tested in a three-seater flush-mounting box.	N/A
B.3.3	D.C. mains polarity test (IEC 60065, 4.2.2) & (IEC 60950-1, 5.3.1)		N/A
B.3.4	Setting of voltage selector : (IEC 60065, 4.3.14) & (IEC 60950-1, 5.3.1)		—
B.3.5	Maximum load at output terminals : (IEC 60065, 4.3.10) & (IEC 60950-1, 5.3.7)	(See appended table B.3)	—
B.3.6	Reverse battery polarity (IEC 60065, 4.3.12) & (IEC 60950-1, 4.3.8)		N/A
B.3.7	Abnormal operating conditions as specified in Clause E.2. (IEC 60065, 4.3.6) & (IEC 60950-1, 5.3.6)		N/A
B.3.8	Safeguards functional during and after abnormal operating conditions (IEC 60065, 11) & (IEC 60950-1, 5.3.9)	(See appended table B.3)	P
B.4	Simulated single fault conditions (IEC 60065, 4.3) & (IEC 60950-1, 1.4.14)		P
B.4.2	Temperature controlling device open or short-circuited : (IEC 60065, 4.3.7) & (IEC 60950-1, 5.3.2)	(See appended table B.4)	—
B.4.3	Motor tests (IEC 60065, 4.3.7) & (IEC 60950-1, 5.3.2)		N/A
B.4.3.1	Motor blocked or rotor locked increasing the internal ambient temperature : (IEC 60065, 4.3.7) & (IEC 60950-1, 5.3.2)	(See Clause G.5)	—
B.4.4	Short circuit of functional insulation (IEC 60950-1, 5.3.4)		-


IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2

Clause	Requirement + Test	Result - Remark	Verdict
B.4.4.1	Short circuit of clearances for functional insulation		N/A
B.4.4.2	Short circuit of creepage distances for functional insulation	See above.	N/A
B.4.4.3	Short circuit of functional insulation on coated printed boards		N/A
B.4.5	Short circuit and interruption of electrodes in tubes and semiconductors (IEC 60065, 4.3.4) & (IEC 60950-1, 5.3.7)		P
B.4.6	Short circuit or disconnect of passive components (IEC 60065, 4.3.5) & (IEC 60950-1, 5.3.7)		P
B.4.7	Continuous operation of components (IEC 60065, 4.3.8) & (IEC 60950-1, 5.3.5)		N/A
B.4.8	Class 1 and Class 2 energy sources within limits during and after single fault conditions (IEC 60065, 11) & (IEC 60950-1, 5.3.9)		P
B.4.9	Battery charging under single fault conditions ... : (IEC 60065, 14.11.3) & (IEC 60950-1, 4.3.8)	(See Annex M)	—




C	UV RADIATION		-
C.1	Protection of materials in equipment from UV radiation (IEC 60950-1, 4.3.13.3)		N/A
C.1.2	Requirements		N/A
C.1.3	Test method		N/A
C.2	UV light conditioning test (IEC 60950-1, Annex Y)		N/A
C.2.1	Test apparatus (IEC 60950-1, Y.1)		N/A
C.2.2	Mounting of test samples (IEC 60950-1, Y.2)		N/A
C.2.3	Carbon-arc light-exposure apparatus (IEC 60950-1, Y.3)		N/A
C.2.4	Xenon-arc light exposure apparatus (IEC 60950-1, Y.4)		N/A

D	TEST GENERATORS		-
D.1	Impulse test generators (IEC 60065, Annex K) & (IEC 60950-1, N.1)		N/A
D.2	Antenna interface test generator (IEC 60950-1, N.2)		N/A
D.3	Electronic pulse generator		N/A

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict
E	TEST CONDITIONS FOR EQUIPMENT CONTAINING AUDIO AMPLIFIERS		-
E.1	Audio amplifier normal operating conditions (IEC 60065, 4.2.5) & (IEC 60950-1, 4.5.1)		N/A
	Audio signal voltage (V)		—
	Rated load impedance (Ω)		—
E.2	Audio amplifier abnormal operating conditions (IEC 60065, 4.3.6) & (IEC 60950-1, 5.3.6)		N/A

F	EQUIPMENT MARKINGS, INSTRUCTIONS, AND INSTRUCTIONAL SAFEGUARDS		-
F.1	General requirements (IEC 60065, 5.1, 5.2, 5.3) & (IEC 60950-1, 1.7.2.1)	See instruction sheet.	P
	Instructions – Language	Seen in Italian.	—
F.2	Letter symbols and graphical symbols (IEC 60065, 5.1)		P
F.2.1	Letter symbols according to IEC60027-1 (IEC 60065, 5.1)		P
F.2.2	Graphic symbols IEC, ISO or manufacturer specific (IEC 60065, 5.1) & (IEC 60950-1, 1.7.1.1)		P
F.3	Equipment markings		-
F.3.1	Equipment marking locations (IEC 60065, 5.1) & (IEC 60950-1, 1.7.1.2)		P
F.3.2	Equipment identification markings (IEC 60065, 5.2) & (IEC 60950-1, 1.7.1.2)	See marking plate	P
F.3.2.1	Manufacturer identification	 (on equipment) See marking plate	—
F.3.2.2	Model identification	See marking plate	—
F.3.3	Equipment rating markings (IEC 60065, 5.2) & (IEC 60950-1, 1.7.1.1)	See § F.5.	P
F.3.3.1	Equipment with direct connection to mains (IEC 60065, 5.2 e) & (IEC 60950-1, 1.7.1.1)	See below.	P
F.3.3.2	Equipment without direct connection to mains (IEC 60065, 5.2 e) & (IEC 60950-1, 1.7.1.1)		N/A
F.3.3.3	Nature of supply voltage..... (IEC 60065, 5.2 d) & (IEC 60950-1, 1.7.1.1)	See marking plate	—
F.3.3.4	Rated voltage	See marking plate	—
F.3.3.4	Rated frequency	See marking plate	—

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict
F.3.3.6	Rated current or rated power : (IEC 60065, 5.2 g), h)) & (IEC 60950-1, 1.7.1.1)	See marking plate	—
F.3.3.7	Equipment with multiple supply connections (IEC 60950-1, 1.7.1.1)		N/A
F.3.4	Voltage setting device (IEC 60065, 5.2 e)) & (IEC 60950-1, 1.7.4)		N/A
F.3.5	Terminals and operating devices		N/A
F.3.5.1	Mains appliance outlet and socket-outlet markings : (IEC 60065, 5.3 c)) & (IEC 60950-1, 1.7.5)		—
F.3.5.2	Switch position identification marking : (IEC 60065, 5.5.3) & (IEC 60950-1, 1.7.8.3)		—
F.3.5.3	Replacement fuse identification and rating markings : (IEC 60065, 14.6.3.2) & (IEC 60950-1, 1.7.6)	Non-replaceable fuse	—
F.3.5.4	Replacement battery identification marking : (IEC 60065, 5.5.2 c)) & (IEC 60950-1, 1.7.13)		—
F.3.5.5	Terminal marking location (IEC 60950-1, 1.7.7.1)	Class II appliance.	N/A
F.3.6	Equipment markings related to equipment classification		P
F.3.6.1	Class I Equipment		N/A
F.3.6.1.1	Protective earthing conductor terminal (IEC 60065, 5.3 a)) & (IEC 60950-1, 1.7.7.1)		N/A
F.3.6.1.2	Neutral conductor terminal (IEC 60950-1, 1.7.7.2)	Neutral conductor terminal marked with "N".	N/A
F.3.6.1.3	Protective bonding conductor terminals (IEC 60950-1, 1.7.7.1)		N/A
F.3.6.2	Class II equipment (IEC60417-5172)		P
F.3.6.2.1	Class II equipment with or without functional earth (IEC 60065, 5.2 c)) & (IEC 60950-1, 1.7.7.2)	Symbol IEC 60417-5172 provided.	P
F.3.6.2.2	Class II equipment with functional earth terminal marking (IEC 60950-1, 2.6.2)		N/A
F.3.7	Equipment IP rating marking : (IEC 60065, A.5)		—
F.3.8	External power supply output marking (IEC 60065, 5.3 c)	USB connector: 5V $\overline{\text{---}}$, 3A See marking plate	P
F.3.9	Durability, legibility and permanence of marking (IEC 60065, 5.1) & (IEC 60950-1, 1.7.11)	Test performed.	P
F.3.10	Test for permanence of markings (IEC 60065, 5.1) & (IEC 60950-1, 1.7.11)		P

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict
F.4	Instructions (IEC 60065, 5.4, 5.5.2) & (IEC 60950-1, 1.7.2.1, 1.7.14, 5.1.7, 3,4,3)		-
	a) Equipment for use in locations where children not likely to be present – marking		N/A
	b) Instructions given for installation or initial use	The appliance must be installed away from other sources heat. See the instruction sheet and “Conditions of acceptability”.	P
	c) Equipment intended to be fastened in place		P
	d) Equipment intended for use only in restricted access area		N/A
	e) Audio equipment terminals classified as ES3 and other equipment with terminals marked in accordance F.3.6.1		N/A
	f) Protective earthing employed as safeguard		N/A
	g) Protective earthing conductor current exceeding ES 2 limits		N/A
	h) Symbols used on equipment	See the instruction sheet.	P
	i) Permanently connected equipment not provided with all-pole mains switch	See the instruction sheet.	P
	j) Replaceable components or modules providing safeguard function		N/A
F.5	Instructional safeguards (IEC 60065, 5.4, 5.5)	Both symbols are placed on the installation instructions and on the packaging of the device. ISO 7000-0434, ISO 7000-1641   Instruction sheet provided also with IEC 60417-6182 symbol. 	P
	Where “instructional safeguard” is referenced in the test report it specifies the required elements, location of marking and/or instruction		P

G	COMPONENTS	-
G.1	Switches (IEC 60950-1, 2.8.7)	N/A
G.1.1	General requirements (IEC 60065, 14.7)	N/A
G.1.2	Ratings, endurance, spacing, maximum load (IEC 60065, 14.7)	N/A
G.2	Relays (IEC 60065, 14.4.3) & (IEC 60950-1, 2.8.7)	-

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict
G.2.1	General requirements		N/A
G.2.2	Overload test (IEC 60950-1, 2.8.7.2)		N/A
G.2.3	Relay controlling connectors supply power		N/A
G.2.4	Mains relay, modified as stated in G.2		N/A
G.3	Protection Devices		-
G.3.1	Thermal cut-offs (IEC 60065, 14.6.2.2)		P
G.3.1.1a) &b)	Thermal cut-outs separately approved according to IEC 60730 with conditions indicated in a) & b) (IEC 60065, 14.6.2.2 a))	Bimetal Thermal Protector certified as separate parts. (See appended table 4.1.2)	P
G.3.1.1c)	Thermal cut-outs tested as part of the equipment as indicated in c) (IEC 60065, 14.6.2.2 b))		N/A
G.3.1.2	Thermal cut-off connections maintained and secure		N/A
G.3.2	Thermal links (IEC 60065, 14.6.2.3)		N/A
G.3.2.1a)	Thermal links separately tested with IEC 60691 (IEC 60065, 14.6.2.3 a))		N/A
G.3.2.1b)	Thermal links tested as part of the equipment (IEC 60065, 14.6.2.3 b))		N/A
	Aging hours (H)		—
	Single Fault Condition		—
	Test Voltage (V) and Insulation Resistance (Ω) :		—
G.3.3	PTC Thermistors (IEC 60065, 14.6.4) & (IEC 60950-1, 2.5)		N/A
G.3.4	Overcurrent protection devices (IEC 60065, 14.6.3) & (IEC 60950-1, 2.7)	Primary fuse provided. See also Annex 2: drawings and track fuse (See appended table 4.1.2)	P
G.3.5	Safeguards components not mentioned in G.3.1 to G.3.5 (IEC 60065, 14.6.5)		-
G.3.5.1	Non-resettable devices suitably rated and marking provided (IEC 60065, 14.6.5)		N/A
G.3.5.2	Single faults conditions..... (IEC 60065, 14.6.5)	(See appended Table B.4)	—
G.4	Connectors		-
G.4.1	Spacings (IEC 60950-1, 2.10.3.1, 2.10.4.3)		N/A
G.4.2	Mains connector configuration (IEC 60065, 15.1) & (IEC 60950-1, 3.2.4)	Mains terminal block certified as separate part. See Table 4.1.2.	—

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict
G.4.3	Plug is shaped that insertion into mains socket-outlets or appliance coupler is unlikely (IEC 60065, 15.1.2) & (IEC 60950-1, 4.3.5)		N/A
G.5	Wound Components		-
G.5.1	Wire insulation in wound components.....	Triple Insulated Wire approved as separate part. (See appended table 4.1.2) (See Annex J)	—
G.5.1.2 a)	Two wires in contact inside wound component, angle between 45° and 90° (IEC 60065, 8.16) & (IEC 60950-1, 2.10.5.12)		N/A
G.5.1.2 b)	Construction subject to routine testing (IEC 60950-1, 2.10.5.11)		N/A
G.5.2	Endurance test on wound components (IEC 60065, 8.17)		N/A
G.5.2.1	General test requirements		N/A
G.5.2.2	Heat run test (IEC 60065, 8.17 a))		N/A
	Time (s)		—
	Temperature (°C)		—
G.5.2.3	Wound Components supplied by mains (IEC 60065, 8.17 d))		N/A
G.5.3	Transformers (IEC 60950-1, 1.5.4)		P
G.5.3.1	Requirements applied (IEC61204-7, IEC61558-1/-2, and/or IEC62368-1).....	Tested in the appliance	—
	Position	T2	—
	Method of protection	Switching Power supply; Primary fuse.	—
G.5.3.2	Insulation		P
	Protection from displacement of windings..... (IEC 60065, 14.4) & (IEC 60950-1, C.2)	Insulation tape.	—
G.5.3.3	Overload test	(See appended table B.3)	—
G.5.3.3.1	Test conditions (IEC 60950-1, C.1)	Considered.	P
G.5.3.3.2	Winding Temperatures testing in the unit (IEC 60065, 11.2) & (IEC 60950-1, C.1)	Considered.	P
G.5.3.3.3	Winding Temperatures - Alternative test method		N/A
G.5.4	Motors		-
G.5.4.1	General requirements (IEC 60065, 4.3.7, 14.10) & (IEC 60950-1, B.1)		N/A

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict
	Position		—
G.5.4.2	Test conditions (IEC 60065, 4.3.7, 14.10) & (IEC 60950-1, B.2)		N/A
G.5.4.3	Running overload test (IEC 60950-1, B.4)		N/A
G.5.4.4	Locked-rotor overload test (IEC 60065, 4.3.7) & (IEC 60950-1, B.5)		N/A
	Test duration (days)		—
G.5.4.5	Running overload test for d.c. motors in secondary circuits (IEC 60950-1, B.6)		N/A
G.5.4.5.2	Tested in the unit (IEC 60950-1, B.6.2)		N/A
	Electric strength test (V)		—
G.5.4.5.3	Tested on the Bench - Alternative test method; test time (h)		—
	Electric strength test (V)		—
G.5.4.6	Locked-rotor overload test for d.c. motors in secondary circuits (IEC 60065, 4.3.7) & (IEC 60950-1, B.7)		N/A
G.5.4.6.2	Tested in the unit (IEC 60950-1, B.7.2)		N/A
	Maximum Temperature		—
	Electric strength test (V)		—
G.5.4.6.3	Tested on the bench - Alternative test method; test time (h)		—
	Electric strength test (V)		—
G.5.4.7	Motors with capacitors (IEC 60950-1, B.8)		N/A
G.5.4.8	Three-phase motors (IEC 60950-1, B.9)		N/A
G.5.4.9	Series motors (IEC 60950-1, B.10)		N/A
	Operating voltage		—
G.6	Wire Insulation		-
G.6.1	General (IEC 60065, 8.16) & (IEC 60950-1, 2.10.5.12)		N/A
G.6.2	Solvent-based enamel wiring insulation (IEC 60065, 8.1) & (IEC 60950-1, 2.10.5.13)		N/A

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict
G.7	Mains supply cords		-
G.7.1	General requirements (IEC 60065, 16.1, 16.2) & (IEC 60950-1, 3.2.5.1)		N/A
	Type.....:		—
	Rated current (A).....:		—
	Cross-sectional area (mm ²), (AWG).....:		—
G.7.2	Compliance and test method (IEC 60065, 16.2) & (IEC 60950-1, 3.2.5.1)		N/A
G.7.3	Cord anchorages and strain relief for non-detachable power supply cords		N/A
G.7.3.2	Cord strain relief		N/A
G.7.3.2.1	Requirements (IEC 60065, 16.5) & (IEC 60950-1, 3.2.6)		N/A
	Strain relief test force (N)		—
G.7.3.2.2	Strain relief mechanism failure (IEC 60950-1, 3.2.6)		N/A
G.7.3.2.3	Cord sheath or jacket position, distance (mm).....: (IEC 60065, 16.5) & (IEC 60950-1, 3.2.7)		—
G.7.3.2.4	Strain relief comprised of polymeric material (IEC 60065, 16.5) & (IEC 60950-1, 3.2.6, 3.2.7)		N/A
G.7.4	Cord Entry	(See appended table 5.4.11.1)	—
G.7.5	Non-detachable cord bend protection		N/A
G.7.5.1	Requirements (IEC 60950-1, 3.2.8)		N/A
G.7.5.2	Mass (g)		—
	Diameter (m)		—
	Temperature (°C)		—
G.7.6	Supply wiring space (IEC 60950-1, 3.2.9)		N/A
G.7.6.2	Stranded wire (IEC 60950-1, 3.3.8)		N/A
G.7.6.2.1	Test with 8 mm strand (IEC 60950-1, 3.3.8)		N/A
G.8	Varistors		-
G.8.1	General requirements		N/A
G.8.2	Safeguard against shock (IEC 60065, 14.13) & (IEC 60950-1, Annex Q)		N/A
G.8.3	Safeguard against fire		N/A

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict
G.8.3.2	Varistor overload test: (IEC 60065, 14.13)	(See appended table B.3)	—
G.8.3.3	Temporary overvoltage: (IEC 60065, 14.13)	(See appended table B.3)	—
G.9	Integrated Circuit (IC) Current Limiters (IEC 60950-1, Annex CC)		-
G.9.1 a)	Manufacturer defines limit at max. 5A. (IEC 60950-1, CC.1)		N/A
G.9.1 b)	Limiters do not have manual operator or reset (IEC 60950-1, CC.1)		N/A
G.9.1 c)	Supply source does not exceed 250 VA: (IEC 60950-1, CC.1)		—
G.9.1 d)	IC limiter output current (max. 5A): (IEC 60950-1, CC.1)		—
G.9.1 e)	Manufacturers' defined drift: (IEC 60950-1, CC.1)		—
G.9.2	Test Program 1 (IEC 60950-1, CC.2)		N/A
G.9.3	Test Program 2 (IEC 60950-1, CC.3)		N/A
G.9.4	Test Program 3 (IEC 60950-1, CC.4)		N/A
G.10	Resistors (IEC 60065, 14.2) & (IEC 60950-1, 1.5.7)		-
G.10.1	General requirements (IEC 60065, 14.2) & (IEC 60950-1, 1.5.7.1)		N/A
G.10.2	Resistor test (IEC 60065, 14.2) & (IEC 60950-1, 1.5.7.2)		N/A
G.10.3	Test for resistors serving as safeguards between the mains and an external circuit consisting of a coaxial cable (IEC 60065, 14.2) & (IEC 60950-1, 1.5.7.3)		N/A
G.10.3.1	General requirements		N/A
G.10.3.2	Voltage surge test		N/A
G.10.3.3	Impulse test (IEC 60950-1, 1.5.7.3)		N/A
G.11	Capacitor and RC units (IEC 60065, 14.3) & (IEC 60950-1, 1.5.6)		-
G.11.1	General requirements (IEC 60065, 14.3.1) & (IEC 60950-1, 1.5.6)	Capacitor across ES3 and ES1: class capacitor Y1, number of capacitors 2. See Table 4.1.2 List of critical components.	P

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict
G.11.2	Conditioning of capacitors and RC units (IEC 60065, 14.3.1) & (IEC 60950-1, 1.5.6)		N/A
G.11.3	Rules for selecting capacitors (IEC 60065, 14.3.2) & (IEC 60950-1, 1.5.6)		N/A
G.12	Optocouplers		-
	Optocouplers comply with IEC 60747-5-5:2007 Spacing or Electric Strength Test (specify option and test results).....: (IEC 60065, 14.12) & (IEC 60950-1, 2.10.5.4)		N/A
	Type test voltage Vini		—
	Routine test voltage, Vini,b		—
G.13	Printed boards (IEC 60065, 13.5) & (IEC 60950-1, 2.10.6)		-
G.13.1	General requirements	See table 4.1.2 List of critical components.	P
G.13.2	Uncoated printed boards (IEC 60065, 13.5.1) & (IEC 60950-1, 2.10.6.1)		P
G.13.3	Coated printed boards (IEC 60065, 13.5.2) & (IEC 60950-1, 2.10.6.2)		N/A
G.13.4	Insulation between conductors on the same inner surface (IEC 60950-1, 2.10.6.3)		N/A
	Compliance with cemented joint requirements (Specify construction).....: (IEC 60065, 13.5.2, 13.6, 13.7) & (IEC 60950-1, 2.10.5.5)		—
G.13.5	Insulation between conductors on different surfaces (IEC 60065, 13.5.1) & (IEC 60950-1, 2.10.6.4)		N/A
	Distance through insulation	(See appended table 5.4.4.5)	—
	Number of insulation layers (pcs)		—
G.13.6	Tests on coated printed boards (IEC 60065, 13.5.2) & (IEC 60950-1, 2.10.8)		N/A
G.13.6.1	Sample preparation and preliminary inspection (IEC 60950-1, 2.10.8.1)		N/A
G.13.6.2a)	Thermal conditioning (IEC 60950-1, 2.10.8.2)		N/A
G.13.6.2b)	Electric strength test (IEC 60950-1, 2.10.8.3)		N/A
G.13.6.2c)	Abrasion resistance test (IEC 60950-1, 2.10.8.4)		N/A
G.14	Coating on components terminals		-

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict
G.14.1	Requirements : (IEC 60950-1, 2.10.7)	(See G.13)	—
G.15	Liquid filled components		-
G.15.1	General requirements		N/A
G.15.2	Requirements		N/A
G.15.3	Compliance and test methods		N/A
G.15.3.1	Hydrostatic pressure test		N/A
G.15.3.2	Creep resistance test		N/A
G.15.3.3	Tubing and fittings compatibility test		N/A
G.15.3.4	Vibration test		N/A
G.15.3.5	Thermal cycling test		N/A
G.15.3.6	Force test		N/A
G.15.4	Compliance		N/A
G.16	IC including capacitor discharge function (ICX)		-
a)	Humidity treatment in accordance with sc5.4.8 – 120 hours		N/A
b)	Impulse test using circuit 2 with $U_c =$ to transient voltage :		—
C1)	Application of ac voltage at 110% of rated voltage for 2.5 minutes		N/A
C2)	Test voltage :		—
D1)	10,000 cycles on and off using capacitor with smallest capacitance resistor with largest resistance specified by manufacturer		N/A
D2)	Capacitance :		—
D3)	Resistance :		—

H	CRITERIA FOR TELEPHONE RINGING SIGNALS		-
H.1	General (IEC 60950-1, M.1)		N/A
H.2	Method A (IEC 60950-1, M.2)		N/A
H.3	Method B (IEC 60950-1, M.3)		N/A
H.3.1	Ringing signal (IEC 60950-1, M.3.1)		N/A
H.3.1.1	Frequency (Hz) : (IEC 60950-1, M.3.1.1)		—
H.3.1.2	Voltage (V) : (IEC 60950-1, M.3.1.2)		—

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict
H.3.1.3	Cadence; time (s) and voltage (V): (IEC 60950-1, M.3.1.3)		—
H.3.1.4	Single fault current (mA):.....: (IEC 60950-1, M.3.1.4)		—
H.3.2	Tripping device and monitoring voltage: (IEC 60950-1, M.3.2)		—
H.3.2.1	Conditions for use of a tripping device or a monitoring voltage complied with (IEC 60950-1, M.3.2.1)		N/A
H.3.2.2	Tripping device (IEC 60950-1, M.3.2.2)		N/A
H.3.2.3	Monitoring voltage (V): (IEC 60950-1, M.3.2.3)		—

J	INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION		-
	General requirements (IEC 60065, Annex H) & (IEC 60950-1, Annex U)	Triple Insulated Wire approved as separate part. (See appended table 4.1.2)	P

K	SAFETY INTERLOCKS		-
K.1	General requirements (IEC 60065, 14.8) & (IEC 60950-1, 2.8.1, 2.8.2)		N/A
K.2	Components of safety interlock safeguard mechanism: (IEC 60950-1, 2.8.7)	(See Annex G)	—
K.3	Inadvertent change of operating mode (IEC 60950-1, 2.8.3)		N/A
K.4	Interlock safeguard override (IEC 60950-1, 2.8.6)		N/A
K.5	Fail-safe (IEC 60950-1, 2.8.4)		N/A
	Compliance:	(See appended table B.4)	—
K.6	Mechanically operated safety interlocks (IEC 60950-1, 2.8.5)		N/A
K.6.1	Endurance requirement (IEC 60950-1, 2.8.5)		N/A
K.6.2	Compliance and Test method: (IEC 60950-1, 2.8.5)		—
K.7	Interlock circuit isolation (IEC 60950-1, 2.8.7)		N/A

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2

Clause	Requirement + Test	Result - Remark	Verdict
K.7.1	Separation distance for contact gaps & interlock circuit elements (type and circuit location): (IEC 60950-1, 2.8.7.1, 2.8.7.3)		—
K.7.2	Overload test, Current (A): (IEC 60950-1, 2.8.7.2)		—
K.7.3	Endurance test (IEC 60950-1, 2.8.7.3)		N/A
K.7.4	Electric strength test: (IEC 60950-1, 2.8.7.4)	(See appended table 5.4.11)	—

L	DISCONNECT DEVICES		-
L.1	General requirements (IEC 60065, 5.5.3) & (IEC 60950-1, 3.4.1, 3.4.2)	See instruction sheet .	P
L.2	Permanently connected equipment (IEC 60065, 5.5.3) & (IEC 60950-1, 3.4.3)	See instruction sheet .	P
L.3	Parts that remain energized (IEC 60065, 5.5.3) & (IEC 60950-1, 3.4.4)		N/A
L.4	Single phase equipment (IEC 60065, 5.5.3) & (IEC 60950-1, 3.4.6)	See instruction sheet.	P
L.5	Three-phase equipment (IEC 60065, 8.18) & (IEC 60950-1, 3.4.7)		N/A
L.6	Switches as disconnect devices (IEC 60065, 5.5.3) & (IEC 60950-1, 3.4.8)		N/A
L.7	Plugs as disconnect devices (IEC 60065, 5.5.3) & (IEC 60950-1, 3.4.9)		N/A
L.8	Multiple power sources (IEC 60950-1, 3.4.11)		N/A

M	EQUIPMENT CONTAINING BATTERIES AND THEIR PROTECTION CIRCUITS		-
M.1	General requirements (IEC 60065, 5.5.2 c)) & (IEC 60950-1, 1.7.13)	Equipment without batteries.	N/A
M.2	Safety of batteries and their cells (IEC 60065, 14.11.1) & (IEC 60950-1, 4.3.8)		N/A
M.2.1	Requirements (IEC 60950-1, 4.3.8)		N/A
M.2.2	Compliance and test method (identify method) ..: (IEC 60950-1, 4.3.8)		—
M.3	Protection circuits (IEC 60950-1, 4.3.8)		N/A
M.3.1	Requirements (IEC 60950-1, 4.3.8)		N/A

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict
M.3.2	Tests (IEC 60950-1, 4.3.8)		N/A
	- Overcharging of a rechargeable battery		N/A
	- Unintentional charging of a non-rechargeable battery		N/A
	- Reverse charging of a rechargeable battery		N/A
	- Excessive discharging rate for any battery		N/A
M.3.3	Compliance : (IEC 60950-1, 4.3.8)	(See appended Tables and Annex M and M.4)	—
M.4	Additional safeguards for equipment containing secondary lithium battery		N/A
M.4.1	General		N/A
M.4.2	Charging safeguards		N/A
M.4.2.1	Charging operating limits		N/A
M.4.2.2a)	Charging voltage, current and temperature : (IEC 60065, 14.11.3)	(See Table M.4)	—
M.4.2.2 b)	Single faults in charging circuitry : (IEC 60065, 14.11.3)	(See Annex B.4)	—
M.4.3	Fire Enclosure		N/A
M.4.4	Endurance of equipment containing a secondary lithium battery		N/A
M.4.4.2	Preparation		N/A
M.4.4.3	Drop and charge/discharge function tests (IEC 60065, 14.11.5)		N/A
	Drop		N/A
	Charge		N/A
	Discharge		N/A
M.4.4.4	Charge-discharge cycle test		N/A
M.4.4.5	Result of charge-discharge cycle test		N/A
M.5	Risk of burn due to short circuit during carrying		N/A
M.5.1	Requirement		N/A
M.5.2	Compliance and Test Method (Test of P.2.3)		N/A
M.6	Prevention of short circuits and protection from other effects of electric current		N/A
M.6.1	Short circuits		N/A
M.6.1.1	General requirements		N/A
M.6.1.2	Test method to simulate an internal fault		N/A
M.6.1.3	Compliance (Specify M.6.1.2 or alternative method) :		—
M.6.2	Leakage current (mA) :		—

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict
M.7	Risk of explosion from lead acid and NiCd batteries		N/A
M.7.1	Ventilation preventing explosive gas concentration		N/A
M.7.2	Compliance and test method		N/A
M.8	Protection against internal ignition from external spark sources of lead acid batteries		N/A
M.8.1	General requirements		N/A
M.8.2	Test method		N/A
M.8.2.1	General requirements		N/A
M.8.2.2	Estimation of hypothetical volume V_z (m ³ /s)..... :		—
M.8.2.3	Correction factors..... :		—
M.8.2.4	Calculation of distance d (mm) :		—
M.9	Preventing electrolyte spillage		N/A
M.9.1	Protection from electrolyte spillage		N/A
M.9.2	Tray for preventing electrolyte spillage		N/A
M.10	Instructions to prevent reasonably foreseeable misuse (Determination of compliance: inspection, data review; or abnormal testing) : (IEC 60065, 5.5.1)		—

N	ELECTROCHEMICAL POTENTIALS		N/A
	Metal(s) used : (IEC 60065, Annex F) & (IEC 60950-1, Annex J)		—

O	MEASUREMENT OF CREEPAGE DISTANCES AND CLEARANCES		P
	Figures O.1 to O.20 of this Annex applied : (IEC 60065, Annex E) & (IEC 60950-1, Annex F)	Considered.	—

P	SAFEGUARDS AGAINST ENTRY OF FOREIGN OBJECTS AND SPILLAGE OF INTERNAL LIQUIDS		-
P.1	General requirements	No opening in the appliance when it is installed. See "Conditions of acceptability".	N/A
P.2.2	Safeguards against entry of foreign object (IEC 60065, 9.1.3) & (IEC 60950-1, 4.6.1)		N/A
	Location and Dimensions (mm) :		—
P.2.3	Safeguard against the consequences of entry of foreign object		P
P.2.3.1	Safeguards against the entry of a foreign object (IEC 60950-1, 4.6.1, 4.6.4.3)		P

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict
	Openings in transportable equipment		N/A
	Transportable equipment with metalized plastic parts		—
P.2.3.2	Openings in transportable equipment in relation to metalized parts of a barrier or enclosure (identification of supplementary safeguard) : (IEC 60950-1, 4.6.4.2, 4.6.4.3)	Tests performed trough USB port.	—
P.3	Safeguards against spillage of internal liquids	Inside the product they are not present in liquids	N/A
P.3.1	General requirements		N/A
P.3.2	Determination of spillage consequences		N/A
P.3.3	Spillage safeguards		N/A
P.3.4	Safeguards effectiveness		N/A
P.4	Metallized coatings and adhesive securing parts	Not provided.	N/A
P.4.2 a)	Conditioning testing (IEC 60950-1, 4.6.5)		N/A
	Tc (°C).....		—
	Tr (°C)		—
	Ta (°C).....		—
P.4.2 b)	Abrasion testing	(See G.13.6.2)	—
P.4.2 c)	Mechanical strength testing	(See Annex T)	—

Q	CIRCUITS INTENDED FOR INTERCONNECTION WITH BUILDING WIRING		-
Q.1	Limited power sources (IEC 60950-1, 2.5)	(See appended Tables)	P
Q.1.1 a)	Inherently limited output (IEC 60950-1, 2.5)		N/A
Q.1.1 b)	Impedance limited output (IEC 60950-1, 2.5)		N/A
	- Regulating network limited output under normal operating and simulated single fault condition		P
Q.1.1 c)	Overcurrent protective device limited output (IEC 60950-1, 2.5)		N/A
Q.1.1 d)	IC current limiter complying with G.9 (IEC 60950-1, 2.5)		N/A
Q.1.2	Compliance and test method (IEC 60950-1, 2.5)	Considered.	P
Q.2	Test for external circuits – paired conductor cable (IEC 60950-1, 6.3)		N/A
	Maximum output current (A)		—
	Current limiting method		—

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2

Clause	Requirement + Test	Result - Remark	Verdict
--------	--------------------	-----------------	---------

R	LIMITED SHORT CIRCUIT TEST		-
R.1	General requirements		N/A
R.2	Determination of the overcurrent protective device and circuit		N/A
R.3	Test method Supply voltage (V) and short-circuit current (A). :		—








S	TESTS FOR RESISTANCE TO HEAT AND FIRE		-
S.1	Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W	See "Conditions of acceptability".	N/A
	Samples, material :		—
	Wall thickness (mm) :		—
	Conditioning (°C) :		—
	Test flame according to IEC 60695-11-5 with conditions as set out		N/A
	- Material not consumed completely		N/A
	- Material extinguishes within 30s		N/A
	- No burning of layer or wrapping tissue		N/A
S.2	Flammability test for fire enclosure and fire barrier integrity	See "Conditions of acceptability".	N/A
	Samples, material :		—
	Wall thickness (mm) :		—
	Conditioning (°C) :		—
	Test flame according to IEC 60695-11-5 with conditions as set out		N/A
	Test specimen does not show any additional hole		N/A
S.3	Flammability test for the bottom of a fire enclosure (IEC 60950-1, A.3)	See "Conditions of acceptability".	N/A
	Samples, material :		—
	Wall thickness (mm) :		—
	Cheesecloth did not ignite		N/A
S.4	Flammability classification of materials	Considered.	N/A
S.5	Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W		N/A
	Samples, material :		—
	Wall thickness (mm) :		—
	Conditioning (test condition), (°C) :		—







IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2











Clause	Requirement + Test	Result - Remark	Verdict
	Test flame according to IEC 60695-11-20 with conditions as set out		N/A
	After every test specimen was not consumed completely		N/A
	After fifth flame application, flame extinguished within 1 min		N/A



T	MECHANICAL STRENGTH TESTS		
T.1	General requirements	§24.1 IEC 60884-1:2002+ Amd.1: 2006+Amd. 2: 2013 applied and T8. See "GENERAL REMARKS".	P
T.2	Steady force test, 10 N: (IEC 60065, 13.3.1) & (IEC 60950-1, 4.2.2)	(See appended table T.2)	—
T.3	Steady force test, 30 N: (IEC 60065, 13.3.1) & (IEC 60950-1, 4.2.3)	(See appended table T3)	—
T.4	Steady force test, 100 N: (IEC 60065, 9.1.7)	(See appended table T4)	—
T.5	Steady force test, 250 N: (IEC 60065, 9.1.7) & (IEC 60950-1, 4.2.4)	(See appended table T5)	—
T.6	Enclosure impact test (IEC 60065, 12.1.4) & (IEC 60950-1, 4.2.5)	(See appended table T6)	N/A
	Fall test		N/A
	Swing test		N/A
T.7	Drop test: (IEC 60065, 12.1.5) & (IEC 60950-1, 4.2.6)	Fixed installation (See appended table T7)	—
T.8	Stress relief test: (IEC 60065, 12.1.6) & (IEC 60950-1, 4.2.7)	(See appended table T8)	—
T.9	Impact Test (glass) (IEC 60065, 19.6.1) & (IEC 60950-1, 4.2.5)		N/A
T.9.1	General requirements		N/A
T.9.2	Impact test and compliance		N/A
	Impact energy (J)		—
	Height (m)		—
T.10	Glass fragmentation test: (IEC 60065, 19.6.2)	(See sub-clause 4.4.4.9)	—
T.11	Test for telescoping or rod antennas (IEC 60065, 12.6)		N/A
	Torque value (Nm)		—

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict
U	MECHANICAL STRENGTH OF CATHODE RAY TUBES (CRT) AND PROTECTION AGAINST THE EFFECTS OF IMPLOSION		-
U.1	General requirements (IEC 60065, 18.1) & (IEC 60950-1, 4.2.8)		N/A
U.2	Compliance and test method for non-intrinsically protected CRTs (IEC 60065, 18.2)		N/A
U.3	Protective Screen.....:	(See Annex T)	—
V	DETERMINATION OF ACCESSIBLE PARTS (FINGERS, PROBES AND WEDGES)		-
V.1	Accessible parts of equipment (IEC 60065, 9.1.1.3, 9.1.3, 9.1.4) & (IEC 60950-1, 1.7.2.5, 2.1.1.1, EE.5)	Test performed with the EUT installed on the it's frame and placed in the wall.	P
V.2	Accessible part criterion		P

4.1.2	TABLE: List of critical components					
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity ¹	
Mains terminal block	Ningbo Ulo Electronics Co Ltd	ULO-TB25	5A, 300V; 1.5mm², Temperature 105°C, Housing PA - UL94 V0	IEC/EN 60998-1, IEC/EN 60998-2-1 UL1059, C22.2 n°158	 (647241)  (E473472)	
PCB (material)	Shanghai Global Electronic Material Ltd	GDM-R1## (ANSI Type FR-4.0)	1.2mm Thick , UL94V-0, Single layer printed wiring boards, DS, max. Oper. Temp. 130°C.	ANSI/UL746E, ANSI/UL 746F, UL94V-0	 (E224772)	
Mains fuse (FU1)	Shenzhen Lanson Electronics Co Ltd	SMT T2A250V	T2A, 250V Standard sheet: 4	IEC 60127-1:2006 IEC 60127-1:2006/ AMD1:2011, IEC 60127-1:2006/ AMD2:2015, IEC 60127-3:2015, EN 60127-3:2015, EN 60127-1:2006+ A1:2011+A2:2015	 (40012592)	
Thermal protector	Changzhou Desheng Henghui Electronics Co., Ltd.	BR-B2D	100°C	EN 60730-2- 2:2002+A1:2006+ A11:2005, EN 60730-1:2011	 (40032370)	
Coil (L1)	Ningbo Beilun Ky Electronics Electronic Co Ltd	DR2W0608L	1mH-S5.0mm	/	Tested In Appliance	
Magnet wire	Dong Guan Xin You Lian Copper Co Ltd	2UEW	Temp 130°C	ANSI/UL 1446	 (E222363)	
Tubing, Extruded Insulating	Shenzhen Woer Heat-Shrinkable Material Co Ltd	RSFR	Temp 125°C Flexible heat shrinkable Polyolefin tubing	ANSI/UL 224	 (E203950)	
F2 (track fuse)	/	/	See Annex 2: drawings and track fuse	/	Tested in appliance.	

Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity ¹
Transformer T2	Ningbo Beilun Ky Electronics Electronic Co Ltd	PQ2012-RM- 02571	Switching Transformer Class A considered	/	Tested In Appliance
Bobbin	Chang Chun Plastics Co Ltd,,	type T375HF	color BK, BN, UL 94V-0, RTI Elect. 150°C, Min. thickness 0.45mm	ANSI/UL, 746A/C/D/H, UL94	 (E59481)
	or Sumitomo Bakelite Co Ltd,	type PM-9630,	color BK, BN, UL 94V-0, RTI Elect. 150°C	ANSI/UL, 746A/C/D/H, UL94 IEC 60695-11-10	 (E41429)
Secondary wire	Suzhou Yusheng Electronic Co Ltd	type TIW-B	reinforced insulation; rated 130° C (Class B)	ANSI/UL 2353, ANSI/UL 60950-1, UL 60601-1, ANSI/UL 61800-5- 1	 (E332529)
	or Furukawa Electric Co Ltd	type TEX-E	reinforced insulation; rated 130° C (Class B)	ANSI/UL 2353, ANSI/UL 60950-1, UL 60601-1, ANSI/UL 61800-5- 1	 (E206440)
	or Totoku Electric Co Ltd	type TIW-2L	reinforced insulation; rated 130° C (Class B)	ANSI/UL 2353, ANSI/UL 60950-1, UL 60601-1, ANSI/UL 61800-5- 1	 (E166483)
Primary wire	Zhejiang Hongbo Technology Co Ltd	type xUEW/130, QA-x/130	MW 75-C; Temp. 130°C (Class B)	ANSI/UL 1446	 (E221719)

Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity ¹
Tape	3M Company	1350F-1 (b)	temp 130°C, Flame Retardant, color Yellow	UL 510A	 (E17385)
	or Jingjiang Yahua Pressure Sensitive Glue Co Ltd	PZ* (b)	temp 130°C, Flame Retardant, color Yellow	UL 510A	 (E165111)
	or Jingjiang Jingyi Adhesive Product Co Ltd	JY25-A (b)	temp 130°C, Flame Retardant, color All except clear	UL 510A	 (E246950)
	or Jingjiang Jingyi Adhesive Product Co Ltd	WF310 (a)	temp 130°C, Flame Retardant, color White	UL 510A	 (E246950)
Tube	Great Holding Industrial Co Ltd	type TFL	Colors BL, NAT, , temp 200°C, Flame UL94VW-1	ANSI/UL 224	 (E156256)
	or Shenzhen Woer Heat-Shrinkable Material Co Ltd	type WF	Colors NT, temp 200°C, Flame UL94VW-1	ANSI/UL 224	 (E203950)
	or Changyuan Electronics Group Co Ltd	type CB-TT-L	Colors ALL including clear, temp 200°C, Flame UL94VW-1	ANSI/UL 224	 (E180908)
Varnish	Suzhou Taihu Electric Advanced Material Co Ltd	type T-4260(a)	/	ANSI/UL 1446	 (E228349)
Y1 capacitors (CY1, CY2)	Jyh Chung Electronic Co., Ltd.	JD Series	1000 pF, 400V, X1,Y1	EN 60384- 14:2013/A1:2016 IEC 60384-14: 2013 IEC 60384-14: 2013/AMD1:2016	 (137027)
Insulation sheet	Chengdu Kanglongxin Plastics Co Ltd	KLX PP BK-10	Colour black, 0.5 mmThick measured, flame class UL94V-0, Temp. 110°C	ANSI/UL 94 EN/IEC 606952-10 to 13 Glow wire test 650°C (Tested in appliance)	 (E315185)

Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity ¹
U1 (primary side regulation controller)	Shanghai On- Bright Electronic Co Ltd	OB2571TCP	Operating Ambient Temperature Ta: -20 to 85°C; MOSFET Drain- Source Breakdown Voltage 600V.	/	/
U2 (secondary synchronous rectifier)	Shanghai On- Bright Electronic Co Ltd	OB2005WCP	Operating Ambient Temperature Ta: -20 to 85°C; Vdd Supply voltage max 5.5V	/	/
USB Type-C Controller (U4)	Semi-High technolgy limited	UC2607	3.0V-5.5V, Support Type-C VBUS 3.0A Current, Temp - 40+85°C.	/	/
Front cover	Covestro Deutschland Ag [Pc Resins]	Material Dsg "Makrolon", type 2407 + (z)(f1)	1.6mmThick, Colour All, UI flame class UL94V-2, Temp. 125°C	ANSI/UL 94 EN/IEC 606952-10 to 13 Glow wire test 650°C (Tested in appliance)	 (UR E41613)
Frame/support	Covestro Deutschland Ag [Pc Resins]	Material Dsg "Makrolon", type 2407 + (z)(f1)	1.4mmThick, Colour All, UI flame class UL94V-2, Temp. 125°C	ANSI/UL 94 EN/IEC 606952-10 to 13 Glow wire test 650°C (Tested in appliance)	 (UR E41613)

Supplementary information:

¹⁾ Provided evidence ensures the agreed level of compliance. See OD-CB2039.

²⁾ Description line content is optional. Main line description needs to clearly detail the component used for testing

4.8.4, 4.8.5	TABLE: Lithium coin/button cell batteries mechanical tests			N/A
(The following mechanical tests are conducted in the sequence noted.)				
4.8.4.2	TABLE: Stress relief test			—
Part		Material	Oven Temperature (°C)	Comments
4.8.4.3	TABLE: Battery replacement test			—
Battery part no. :				—
Battery Installation/withdrawal		Battery Installation/Removal Cycle		Comments
		1		
		2		
		3		
		4		
		5		
		6		
		8		
		9		
		10		
4.8.4.4	TABLE: Drop test			—
Impact Area		Drop Distance	Drop No.	Observations
			1	
			2	
			3	
4.8.4.5	TABLE: Impact			—
Impacts per surface		Surface tested	Impact energy (Nm)	Comments
4.8.4.6	TABLE: Crush test			—
Test position		Surface tested	Crushing Force (N)	Duration force applied (s)
Supplementary information:				

4.8.5	TABLE: Lithium coin/button cell batteries mechanical test result			N/A
Test position		Surface tested	Force (N)	Duration force applied (s)
Supplementary information:				

5.2	TABLE: Classification of electrical energy sources						P
5.2.2.2 – Steady State Voltage and Current conditions							
No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters			ES Class
				U (V _{rms} or V _{pk})	I (A _{pk} or A _{rms})	Hz	
1	90-253V	+5V Output connector “+V” to “-V”	Normal	5.3(no-load)	/	dc	ES1
			Abnormal (overload)	4.41	/	dc	
			Single fault – SC/OC see table B.4	0	/	dc	
5.2.2.3 - Capacitance Limits							
No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters		ES Class	
				Capacitance, nF	U _{pk} (V)		
/	/	/	Normal	/	/	/	
			Abnormal	/	/		
			Single fault – SC/OC	/	/		
5.2.2.4 - Single Pulses							
No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters			ES Class
				Duration (ms)	U _{pk} (V)	I _{pk} (mA)	
/	/	/	Normal	/	/	/	/
			Abnormal	/	/	/	
			Single fault – SC/OC	/	/	/	
5.2.2.5 - Repetitive Pulses							
No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters			ES Class
				Off time (ms)	U _{pk} (V)	I _{pk} (mA)	
/	/	/	Normal	/	/	/	/
			Abnormal	/	/	/	
			Single fault – SC/OC	/	/	/	
Test Conditions: Normal – Abnormal - Supplementary information: SC=Short Circuit, OC=Short Circuit Environmental conditions: relative humidity 42%; atmospheric pressure 1008 mbar, temperature 27°C.							

5.4.1.4, 6.3.2, 9.0, B.2.6	TABLE: Temperature measurements						
	Supply voltage (V) :	90/60Hz	110/60Hz	207/50Hz	253/50Hz	—	
	Ambient T _{min} (°C) :	27	27	27	27	—	
	Ambient T _{max} (°C) :	27	27	27	27	—	
	T _{ma} (°C) :	45	45	45	45	—	
Maximum measured temperature T of part/at:		T (°C)				Allowed T _{max} (45°C)	
(1) PCB adjacent U1 and U2		83	76	70	75	102	
(2) PCB adjacent DB1		83	75	64	65	102	
(3) TP on T2		77	72	66	69	/	
(4) Coil L1 body		74	67	57	58	97	
(5) Transformer T2 (windings)		71	66	61	63	72(*)	
(6) PCB (USB tipo C)		62	58	53	57	102	
(7) Mains connector		64	58	51	51	87	
(8) Front enclosure accessible		42	40	38	39	76	
Supplementary information: Nominal load 3A applied. (*) Class A considered. Temperature measured with thermocouples. (1) PCB Class 130(B) : Tmax + Tamb - Tma = 120 + 27 - 45 = 102°C (2) Transformer T2 Class 105(A) : (Tmax-10) + Tamb - Tma = 90 + 27- 45= 72°C (3) Coil L1 125°C : (Tmax-10) + Tamb - Tma = 115 + 27- 45= 97°C (4) Mains connector : Tmax + Tamb - Tma = 105 + 27 - 45 = 87°C (5) Plastic enclosure: Tmax + Tamb - Tma = 94+ 27- 45= 76°C							
Temperature T of winding:	t ₁ (°C)	R ₁ (Ω)	t ₂ (°C)	R ₂ (Ω)	T (°C)	Allowed T _{max} (°C)	Insulation class
/	/	/	/	/	/	/	/
/	/	/	/	/	/	/	/
Supplementary information: Note 1: Tma should be considered as directed by applicable requirement Note 2: Tma is not included in assessment of Touch Temperatures (Clause 9)							
Environmental conditions: relative humidity 42%; atmospheric pressure 1008 mbar, temperature 27°C.							

5.4.1.10.2	TABLE: Vicat softening temperature of thermoplastics		N/A
Penetration (mm)..... :		/	
Object/ Part No./Material		Manufacturer/t rademark	T softening (°C)
/		/	/
Supplementary information:			

5.4.1.10.3	TABLE: Ball pressure test of thermoplastics				
Allowed impression diameter (mm) :				≤ 2 mm	—
Object/Part No./Material	Manufacturer/trademark	Test temperature (°C)		Impression diameter (mm)	
Mains terminal block (complete sample)	See table 4.1.2	125		0.9	
Transformer bobbin	See table 4.1.2	125		0.8	
Insulation sheet	See table 4.1.2	125		1.1	
Enclosure (front)	See table 4.1.2	125		1.2	
Enclosure (support)	See table 4.1.2	125		1.2	
Supplementary information: /					
Environmental conditions: relative humidity 57%; atmospheric pressure 1002 mbar, temperature 26°C.					

5.4.2.2, 5.4.2.4 and 5.4.3	TABLE: Minimum Clearances/Creepage distance						
Clearance (cl) and creepage distance (cr) at/of/between:	Up (V)	U r.m.s. (V)	Frequency (kHz) ¹	Required cl (mm)	cl (mm) ²	Required ³ cr (mm)	cr (mm)
Between primary to secondary tracks on power supply PWB (*). (transformer side) (RI)	2000	230	78khz	2.54 (*)	6.4	5 (**)	6.4
Between primary to secondary tracks on power supply PWB (*). (U1 side) (RI)	2000	230	78khz	2.54 (*)	6.5	5 (**)	6.5
Between primary to secondary on capacitors CY1 and CY2 (external) (RI)	2000	230	78khz	2.54 (*)	18	5 (**)	26
Between primary to secondary components (body of TP and body of C9) (^) (RI)	2000	230	78khz	2.54 (*)	9	5 (**)	9.8
On PCB: line and neutral track before mains fuse. (BI)	2000	230	78khz	1.27 (*)	3	2.5 (***)	3
On mains connector: line and neutral track before mains fuse. (BI)	2000	230	78khz	1.27 (*)	3	2.5 (***)	3.8
On mains fuse F1: between the two pins. (BI)	2000	230	78khz	1.27 (*)	3	2.5 (***)	3
Supplementary information:							
Note 1: Only for frequency above 30 kHz							
Note 2: See table 5.4.2.4 if this is based on electric strength test							
Note 3: Provide Material Group							
(*) Overvoltage category III, see Table 5.4.2.3.							
(**) The creepage distance becomes 5.5mm because it cannot be less than the Clearances that results from table 5.4.2.3 Minimum Clearances distances using required withstand voltage							
(***)The creepage distance becomes 3mm because it cannot be less than the Clearances that results from table 5.4.2.3 Minimum Clearances distances using required withstand voltage							
(^) Between primary and secondary circuits is interposed a sheet of insulation material (see also Annex 1 Photo).							
Environmental conditions: relative humidity 57%; atmospheric pressure 1002 mbar, temperature 26°C.							

5.4.2.3	TABLE: Minimum Clearances distances using required withstand voltage		
	Overvoltage Category (OV)	:	III
	Pollution Degree.....	:	2
Clearance distanced between:	Required withstand voltage	Required cl (mm)	Measured cl (mm)
Between primary to secondary tracks on power supply PWB. (transformer side) (RI)	4000	5.5	6.4
Between primary to secondary tracks on power supply PWB. (U1 side) (RI)	4000	5.5	6.5
Between primary to secondary on capacitors CY1 and CY2 (external) (RI)	4000	5.5	18
Between primary to secondary components (body of TP and body of C9) (^) (RI)	4000	5.5	9
On PCB: line and neutral track before mains fuse. (BI)	4000	3	3
On mains connector: line and neutral track before mains fuse. (BI)	4000	3	3
On mains fuse F1: between the two pins. (BI)	4000	3	3
Supplementary information: / (^) Between primary and secondary circuits is interposed a sheet of insulation material (see also Annex 1 Photo). Environmental conditions: relative humidity 57%; atmospheric pressure 1002 mbar, temperature 26°C.			

5.4.2.4	TABLE: Clearances based on electric strength test			N/A
Test voltage applied between:	Required cl (mm)	Test voltage (kV) peak/ r.m.s. / d.c.	Breakdown Yes / No	
/	/	/	/	
/	/	/	/	
Supplementary information: /				

5.4.4.2, 5.4.4.5 c) 5.4.4.9	TABLE: Distance through insulation measurements					
Distance through insulation di at/of:	Peak voltage (V)	Frequency (kHz)	Material	Required DTI (mm)	DTI (mm)	
Secondary insulation wire of the mains transformer T2 (*)	482	78khz	(*)	(**)	(*)	
Enclosure thickness (accessible front part)	482	78khz	IIIa,IIIb	0.4	1.5	
Insulation sheet	482	78khz	IIIa,IIIb	0.4	0.49	
Supplementary information: (**) Compliance with Annex J (*) Triple insulation wire certified as separate part, see Table4.1.2 List of critical components Environmental conditions: relative humidity 57%; atmospheric pressure 1002 mbar, temperature 26°C.						

5.4.9	TABLE: Electric strength tests			
Test voltage applied between:	Voltage shape (AC, DC)	Test voltage (V)	Breakdown Yes / No	
Functional:				
/	/	/	/	
Basic/supplementary:				
Main poles before the fuse	AC	2837	No	
/	/	/	/	
Reinforced:				
Primary and metal foil wrapped around the enclosure	AC	4255	No	
Primary and secondary	AC	4255	No	
Supplementary information: / (*)Table 26 used (maximum value applicable between tables 26, 27 and 28. The limit values in the table have been calculated for a category of overvoltage III. Environmental conditions: relative humidity 57%; atmospheric pressure 1002 mbar, temperature 26°C.				

5.5.2.2	TABLE: Stored discharge on capacitors					N/A
Supply Voltage (V), Hz	Test Location	Operating Condition (N, S)	Switch position On or off	Measured Voltage (after 2 seconds)	ES Classification	
/	/	/	/	/	/	
Supplementary information: Permanently connected equipment, flush mounting. X-capacitors installed for testing are: <input type="checkbox"/> bleeding resistor rating: <input type="checkbox"/> ICX: Notes: A. Test Location: Phase to Neutral; Phase to Phase; Phase to Earth; and/or Neutral to Earth B. Operating condition abbreviations: N – Normal operating condition (e.g., normal operation, or open fuse); S –Single fault condition						

5.6.6.2	TABLE: Resistance of protective conductors and terminations				N/A
Accessible part	Test current (A)	Duration (min)	Voltage drop (V)	Resistance (Ω)	
Supplementary information:					

5.7.2.2, 5.7.4	TABLE: Earthed accessible conductive part		P
Supply voltage :			—
Location	Test conditions specified in 6.1 of IEC 60990 or Fault Condition No in IEC 60990 clause 6.2.2.1 through 6.2.2.8, except for 6.2.2.7	Touch current (mA)	
Line L/N to metal foil wrapped around the enclosure	Normal and fault conditions	0.0019	
Line L/N to output	Normal and fault conditions	0.2mA _{rms} 0.35mA _{pk}	
	4		
	5		
	6		
	8		
Supplementary Information:			
Notes:			
[1] Supply voltage is the anticipated maximum Touch Voltage			
[2] Earthed neutral conductor [Voltage differences less than 1% or more]			
[3] Specify method used for measurement as described in IEC 60990 sub-clause 4.3			
[4] IEC60990, sub-clause 6.2.2.7, Fault 7 not applicable.			
[5] (*) IEC60990, sub-clause 6.2.2.2 is not applicable if switch or disconnect device (e.g., appliance coupler) provided.			
Environmental conditions: relative humidity 57%; atmospheric pressure 1002 mbar, temperature 26°C.			

6.2.2		TABLE: Electrical power sources (PS) measurements for classification			
Source	Description	Measurement	Max Power after 3 s	Max Power after 5 s ^{*)}	PS Classification
A	USB Output in normal condition. 100-230V/ 60-50Hz (§ 6.2.2.1)	Power (W):	13.5	13.5	PS1
		VA (V):	4.5	4.5	
		IA (A):	3	3	
B	USB Output in overload condition 90V/60Hz (§ 6.2.2.2)	Power (W):	13.7	13.7	PS1
		VA (V):	4.23	4.23	
		IA (A):	3.24	3.24	
C	USB Output in overload condition 253V/50Hz (§ 6.2.2.2)	Power (W):	14.8	14.8	PS1
		VA (V):	4.41	4.41	
		IA (A):	3.35	3.35	
D	USB Output in short circuit condition 100-230V/ 60-50Hz (§ 6.2.2.3)	Power (W):	< 15 W	< 15 W	PS1
		VA (V):	0	0	
		IA (A):	0	0	
E	Fault conditions 100-230V/ 60-50Hz (§ 6.2.2.3)	Power (W):	< 15 W	< 15 W	PS1
		VA (V):	0	0	
		IA (A):	0	0	
Supplementary Information:					
(*) Measurement taken only when limits at 3 seconds exceed PS1 limits					
Environmental conditions: relative humidity 69%; atmospheric pressure 996mbar, temperature 25°C.					

6.2.3.1	TABLE: Determination of Potential Ignition Sources (Arcing PIS)				
Location	Open circuit voltage After 3 s (V _p)	Measured r.m.s current (I _{rms})	Calculated value (V _p x I _{rms})	Arcing PIS? Yes / No	
Mains terminals block	325	194mA	63	Yes	
Mains terminals block	141	324mA	45.7	Yes	
Other parts of the primary circuit	141/325	324mA	Min. 45.7	Yes	
Secondary terminals block	5.3	/	/	/	
Supplementary information:					
An Arcing PIS requires a minimum of 50 V (peak) a.c. or d.c. An Arcing PIS is established when the product of the open circuit voltage (V _p) and normal operating condition rms current (I _{rms}) is greater than 15.					
Environmental conditions: relative humidity 69%; atmospheric pressure 996mbar, temperature 25°C.					

6.2.3.2	TABLE: Determination of Potential Ignition Sources (Resistive PIS)					
Circuit Location (x-y)	Operating Condition (Normal / Describe Single Fault)	Measured wattage or VA During first 30 s (W / VA)	Measured wattage or VA After 30 s (W / VA)	Protective Circuit, Regulator, or PTC Operated? Yes / No (Comment)	Resistive PIS? Yes/No	
R1	Normal	11.25mW	11.25mW	No	No	
R1	Fault	12.32mW	12.32mW	No	No	
R10	Normal	16mVA	16mVA	No	No	
R10	Fault	2.85mVA	2.85mVA	No	No	
R13	Normal/Fault	0.19mVA	0.19mVA	No	No	
R14	Normal/Fault	Max.0.15W	Max.0.15W	No	No	
R15	Normal/Fault	Max.1.8mW	Max.1.8mW	No	No	
Supplementary Information:						
A combination of voltmeter, VA and ammeter IA may be used instead of a wattmeter.						
If a separate voltmeter and ammeter are used, the product of (VA x IA) is used to determine Resistive PIS classification.						
A Resistive PIS: (a) dissipates more than 15 W, measured after 30 s of normal operation, or (b) under single fault conditions has either a power exceeding 100 W measured immediately after the introduction of the fault if electronic circuits, regulators or PTC devices are used, or has an available power exceeding 15 W measured 30 s after introduction of the fault.						
Environmental conditions: relative humidity 69%; atmospheric pressure 996mbar, temperature 25°C.						

28.1.1 IEC 60884-1:2002+ Amd.1: 2006+Amd. 2: 2013			TABLE: Glow-wire test
Part under test	Material designation / manufacturer	Test temperature (°C)	Remarks
Front cover	See Table 4.1.2 List of critical components	650	No flame
Frame/support	See Table 4.1.2 List of critical components	650	No flame
Insulation sheet	See Table 4.1.2 List of critical components	650	No flame
Supplementary Information:			
Environmental conditions: relative humidity 46%; atmospheric pressure 1002 mbar, temperature 25°C.			

8.5.5	TABLE: High Pressure Lamp		
Description		Values	Energy Source Classification
Lamp type			—
Manufacturer			—
Cat no.			—
Pressure (cold) (MPa).....			MS_
Pressure (operating) (MPa)			MS_
Operating time (minutes)			—
Explosion method			—
Max particle length escaping enclosure (mm) .:			MS_
Max particle length beyond 1 m (mm).....			MS_
Overall result			
Supplementary information:			

B.2.5	TABLE: Input test							
U (V)	I (mA)	I rated (mA)	P (W)	P rated (W)	Fuse No	I fuse (A)	Condition/status	
100/60Hz	324	350	18.6	/	Mains	/	Normal operating conditions Load: 3A	
230/50Hz	194	200(*)	18.3	/	Mains	/		
Supplementary information: /								
Environmental conditions: relative humidity 42%; atmospheric pressure 1008 mbar, temperature 27°C.								
(*) Marked on Instruction sheet.								

B.3		TABLE: Abnormal operating condition tests					P
Ambient temperature (°C)					/		—
Power source for EUT: Manufacturer, model/type, output rating .:					See the next table below.		—
Component No.	Abnormal Condition	Supply voltage, (V)	Test time (h)	Fuse no.	Fuse current, (A)	T-couple/Temp./(°C)/Observation	
/	/	/	/	/	/	/	
Supplementary information: Test table is provided to record abnormal and fault conditions for all applicable energy sources including Thermal burn injury. Column “Abnormal/Fault.” Specify if test condition by indicating “Abnormal” then the condition for a Clause B.3 test or “Single Fault” then the condition for Clause B.4.							

B.3	TABLE: Temperature measurements/ Abnormal operating condition tests							
	Supply voltage (V)	90/60Hz	253/50Hz	90/60Hz	253/50Hz	—		
	Ambient T _{min} (°C)	27	27	27	27	—		
	Ambient T _{max} (°C)	27	27	27	27	—		
	Tma (°C)	45	45	45	45	—		
Maximum measured temperature T of part/at:		T (°C)				Allowed T45°C _{max}		
Load condition		A	B	C	D	/		
(1) PCB adjacent U1 and U2		91	79	36	45	182		
(2) PCB adjacent DB1		89	69	35	39	182		
(3) TP on T2		84	73	35	42	/		
(4) Coil L1 body		81	62	34	38	97		
(5) Transformer T2 (windings)		77	66	35	40	147(*)		
(6) PCB (USB tipo C)		66	60	33	40	182		
(7) Mains connector		68	53	33	35	87		
(8) Front enclosure accessible		45	41	31	32	76		
Supplementary information: Load condition A: overload 3.24A, 12.4W applied. Load condition B: overload 3.35A , 13.7W applied. Load condition C: output in short circuit, initial current 288mA, current after 3h 753mA. Load condition D: output in short circuit, initial current 211mA, current after 3h 707mA. (1) PCB Class 130(B) : Tmax + Tamb - Tma = 200 + 27 - 45 = 182°C (2) Transformer T2, Class 105(A) : (Tmax-10) + Tamb - Tma = 165 + 27- 45= 147°C (3) Coil L1 Class 125°C : (Tmax-10) + Tamb - Tma = 115 + 27- 45= 97°C (4) Mains connector : Tmax + Tamb - Tma = 105 + 27 - 45 = 87°C (5) Plastic enclosure: Tmax + Tamb - Tma = 94+ 27- 45= 76°C (*) Class A considered. Temperature measured with thermocouples.								
Temperature T of winding:		t ₁ (°C)	R ₁ (Ω)	t ₂ (°C)	R ₂ (Ω)	T (°C)	Allowed T _{max} (°C)	Insulation class
/		/	/	/	/	/	/	/
/		/	/	/	/	/	/	/
Supplementary information: Note 1: Tma should be considered as directed by applicable requirement Note 2: Tma is not included in assessment of Touch Temperatures (Clause 9) Environmental conditions: relative humidity 42%; atmospheric pressure 1008 mbar, temperature 27°C.								

B.4		TABLE: Fault condition tests					
Ambient temperature (°C)					25		—
Power source for EUT: Manufacturer, model/type, output rating .:					See below		—
Component No.	Fault Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple/Temp./ (°C)/Observation	
Diode bridge DB1	S-c	90/253	/	-	-	The F1 fuse does not open, the fuse track on the printed circuit is interrupted, which shows burns and carbonization of the same, a spark has occurred during the fault. There were no flames but slight smoke emission. The test was repeated three times.ES3 circuit. No hazardous temperature. No hazard.	
C1	S-c	90/253	/	-	-	The F1 fuse does not open, the fuse track on the printed circuit is interrupted, which shows burns and carbonization of the same, a spark has occurred during the fault. There were no flames but slight smoke emission. The test was repeated three times.ES3 circuit. No hazardous temperature. No hazard.	
U1	S-c (D-s)	90/253	/	-	-	The F1 fuse does not open, the fuse track on the printed circuit is broken but not completely, which has burns and carbonization of the printed circuit, a spark occurred during the failure, there were no flames. The test was repeated three times. At the ends of the diode bridge approximately 40Vac is measured. Considered ES3 circuit in any case. No hazardous temperature. No hazard.	
Diode bridge DB1, C1, U1	S-c (D-s)+ (short circuit of the fuse track)	90/253	/	-	-	F1 fuse blows immediately. No hazardous temperature. No hazard.	

Component No.	Fault Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple/Temp./($^{\circ}$ C)/Observation
Secondary windings of Transformer T2	S-c	90/253	/	-	-	Unit shut down instantly. No hazardous temperature. No hazard.
D5	S-c	90/253	30min.	-	-	The device shut down. No hazardous voltage on secondary circuit. No Hazard.
U2	S-c (D-vin)	90/253	/	-	-	No Hazard.
R13	Open	90/253	1h	-	-	No Hazardous temperature on L1. No Hazard.
	Open	90/253	1h	-	-	
Supplementary information: /						
Environmental conditions: relative humidity 69%; atmospheric pressure 996mbar, temperature 25 $^{\circ}$ C.						

Annex M	TABLE: Batteries								N/A
The tests of Annex M are applicable only when appropriate battery data is not available									
Is it possible to install the battery in a reverse polarity position?:									
	Non-rechargeable batteries			Rechargeable batteries					
	Discharging		Un-intentional charging	Charging		Discharging		Reversed charging	
	Meas. current	Manuf. Specs.		Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.
Max. current during normal condition									
Max. current during fault condition									
Test results:								Verdict	
- Chemical leaks									
- Explosion of the battery									
- Emission of flame or expulsion of molten metal									
- Electric strength tests of equipment after completion of tests									
Supplementary information:									

Annex M.4	TABLE: Additional safeguards for equipment containing secondary lithium batteries				N/A
Battery/Cell No.	Test conditions	Measurements			Observation
		U	I (A)	Temp (C)	
	Normal				
	Abnormal				
	Single fault –SC/OC				
	Normal				
	Abnormal				
	Single fault – SC/OC				
Supplementary Information:					
Battery identification	Charging at T_{lowest} (°C)	Observation	Charging at T_{highest} (°C)	Observation	
Supplementary Information:					

Annex Q.1	TABLE: Circuits intended for interconnection with building wiring (LPS)					P
Note: Measured UOC (V) with all load circuits disconnected:						
Output Circuit	Components	U _{oc} (V)	I _{sc} (A)		S (VA)	
			Meas.	Limit	Meas.	Limit
USB	Normal condition	5.37	3	≤ 8.0	16.11	≤100
USB	Overload	5.37	3.35	≤ 8.0	17.99	≤100
USB	Sc	5.37	0.228	≤ 8.0	1.22	≤100
Supplementary Information: SC=Short circuit, OC=Open circuit See also Tables B.3 and B.4.						
Environmental conditions: relative humidity 42%; atmospheric pressure 1008 mbar, temperature 27°C.						

T.2, T.3, T.4, T.5	TABLE: Steady force test				
Part/Location	Material	Thickness (mm)	Force (N)	Test Duration (sec)	Observation
/	/	/	/	/	/
/	/	/	/	/	/
Supplementary information: T5 applied					

T.6, T.9	TABLE: Impact tests				
Part/Location	Material	Thickness (mm)	Vertical distance (mm)	Observation	
Supplementary information:					

24.1 IEC 60884-1:2002+ Amd.1: 2006+Amd. 2: 2013	TABLE: Impact tests		
Part of enclosure tested per table 18 (A, B, C, D)	Blows per part	Height of fall (mm)	Comments
(frontal cover)	5	100	no damage
(frontal cover)(*)	5	100	no damage
Supplementary information:			
Pendulum hammer test apparatus, with an equivalent mass of 250 g.			
Environmental conditions: relative humidity 46%; atmospheric pressure 1002 mbar, temperature 25°C.			

T.7	TABLE: Drop tests				N/A
Part/Location	Material	Thickness (mm)	Drop Height (mm)	Observation	
Supplementary information:					

T.8	TABLE: Stress relief test					
Part/Location	Material	Thickness (mm)	Oven Temperature (°C)	Duration (h)	Observation	
Complete sample	Plastic enclosure	1.6 (min. 1.4mm)	70	7	No deformation observed	
/	/	/	/	/	/	
Supplementary information: /						
Environmental conditions: relative humidity 46%; atmospheric pressure 1002 mbar, temperature 25°C.						

List of test equipment used:

A completed list of used test equipment shall be provided in the Test Reports when a Manufacturer Testing Laboratory according to TMP/CTF stage 1 or WMT/CTF stage 2 procedure has been used.

“The equipment list contains only instruments used for the issue of this Test Report”

Clause	Measurement / testing	Testing / measuring equipment / material used/ IMQ ID	Range used	Calibration date
5.2/5.2.2.2	Classification and limits of electrical energy sources/Steady State Voltage and Current conditions	Multimeter Fluke, 45-15 S01861	300 V; 10 A	17-02-2020 28-02-2021
5.4.1.4	Maximum operating temperature	Yokogawa, WT 210, S04481	300 V, 1 A, 0.3 kW	05-09-2019 30-09-2020
		Hybrid recorder Yokogawa, 3088 S00416	0°C to 150°C	05-09-2019 30-09-2020
		Multimeter Fluke, 45-15 S01861	300 V; 10 A	17-02-2020 28-02-2021
		Electronic load, HP, 6060B, S01324	250W	/
		Thermocouples/Tersid/ type T/S08084-221 to 228	0° to 400°C	18-03-2019 31-03-2022 Created: 09-2019
5.4.1.8	Determination of working voltage	Oscilloscope Yokogawa, DLM2034 S05406	/	22-01-2020 31-01-2021
5.4.1.10.3	Ball pressure test	Oven Galli, 790, P00316	150°C	/
		Hybrid recorder Yokogawa, 3088 S00416	0°C to 150°C	05-09-2019 30-09-2020
		Thermocouples/Tersid/ type T/ S08084-229, 230	0° to 400°C	18-03-2019 31-03-2022 Created: 09-2019
		Ball pressure test facilities/ATS/02.04/ P02177	/	24-06-2020 30-06-2021
5.4.2.2/5.4.2.3	Minimum Clearances_Creepage distance/Minimum Clearances distances using required withstand voltage	Vernier caliper/Mausser, B/03, S00947	150 mm	02-09-2019 30-09-2020
5.4.3	Minimum Creepage distance	Monocular, MITUTOYO, 183-101, S04496	20mm	25-06-2020 30-06-2021
5.4.4	Solid insulation	Micrometer, Mitutoyo, PK-1025, S03112	0 to 20 mm	04-11-2019 30-11-2020

Clause	Measurement / testing	Testing / measuring equipment / material used/ IMQ ID	Range used	Calibration date
5.4.8	Humidity conditioning	ACS, P00247	/	/
5.4.9	Electric strength test	SCHLEICH, 9589, S07472	6000 V	28-01-2020 31-01-2021
5.7.2.1	Measurement of touch current	Oscilloscope Yokogawa, DLM2034 S05406	5 V	22-01-2020 31-01-2021
		Measuring network Elcolab P03017	-	20-12-2019 31-12-2020
		Measuring network IMQ P03534	-	20-12-2019 31-12-2020
6.2.2	Power source circuit classifications	Multimeter Fluke, 45-15 S01861	300 V ; 10 A	17-02-2020 28-02-2021
6.2.3	Classification of potential ignition sources/ Arcing PIS/ Resistive PIS	Multimeter Fluke, 45-15 S01861	300 V ; 10 A	17-02-2020 28-02-2021
B.2.5	Input test	Yokogawa, WT 210, S04481	300 V, 1 A, 0.3 kW	05-09-2019 30-09-2020
B.3/B.3.5/Annex Q/G.5.3.3/ B.4/6.4.3.3	Abnormal operating condition tests and LPS/ Single Fault Conditions test	Hybrid recorder Yokogawa, 3088 S00416	0°C to 150°C	05-09-2019 30-09-2020
		Thermocouples/Tersid/ type T/S08084-221 to 228	0° to 400°C	18-03-2019 31-03-2022 Created: 07-2019
		Yokogawa, WT 210, S04481	300 V, 1 A, 0.3 kW	05-09-2019 30-09-2020
		Multimeter Fluke, 45-15 S01861	300 V; 10 A	17-02-2020 28-02-2021
		Electronic load, HP, 6060B, S01324	250W	/
F.3.10	Permanence of markings	Petroleum spirit	/	/
T.8	Stress relief test	Oven Galli, 790, P00316	/	/
		Thermocouples/Tersid/ type T/ S08084-229, 230	0° to 400°C	18-03-2019 31-03-2022 Created: 07-2019
		Thermometer, Fluke 52II, S05686	150°C	17-02-2020 28-02-2021

Clause	Measurement / testing	Testing / measuring equipment / material used/ IMQ ID	Range used	Calibration date
24.1 (IEC 60884-1:2002+ Amd.1: 2006+Amd. 2: 2013)	Impact tests	Swing for impact test, ATS Di Galbusera, P03120	mass of 250 g.	/
		Weight scale, Sartorius, L2200P, S00885	20-2000g	26-06-2020 30-06-2021
28.1.1 IEC 60884-1:2002+ Amd.1: 2006+Amd. 2: 2013	Glow-wire test	Thermometer, Fluke 52II, S05686	150°C	17-02-2020 28-02-2021
		Glow-wire equipment, ATS Di Galbusera, P02172	/	01-10-2019 31-10-2020
-	Laboratory Temperature/Humidity	Thermo igrometer / Deltaohm / S08239	15 ÷ 35 °C 25 ÷ 85 % UR	17-10-2019 30-10-2020
-	Laboratory Air pressure	Thermo igrometer barometer / Deltaohm / S08206	600 ÷ 1100 hPa	18-07-2019 31-07-2020
-	Laboratory Power Source	Spitzenberger & Spies EMV E 10000/PAS/D / P02863	0 ÷ 300 V 10kVA	23-07-2019 30-07-2020



Photo N. 1



Photo N. 2

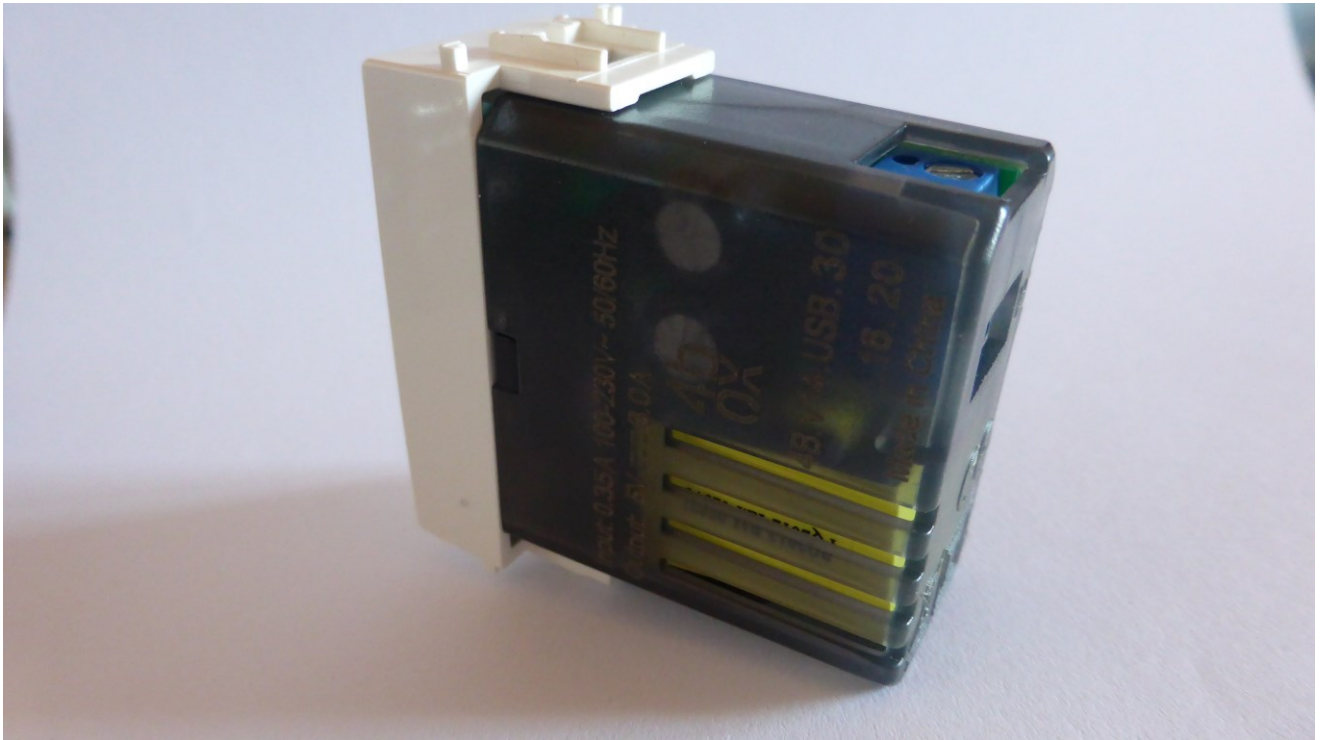


Photo N. 3



Photo N. 4

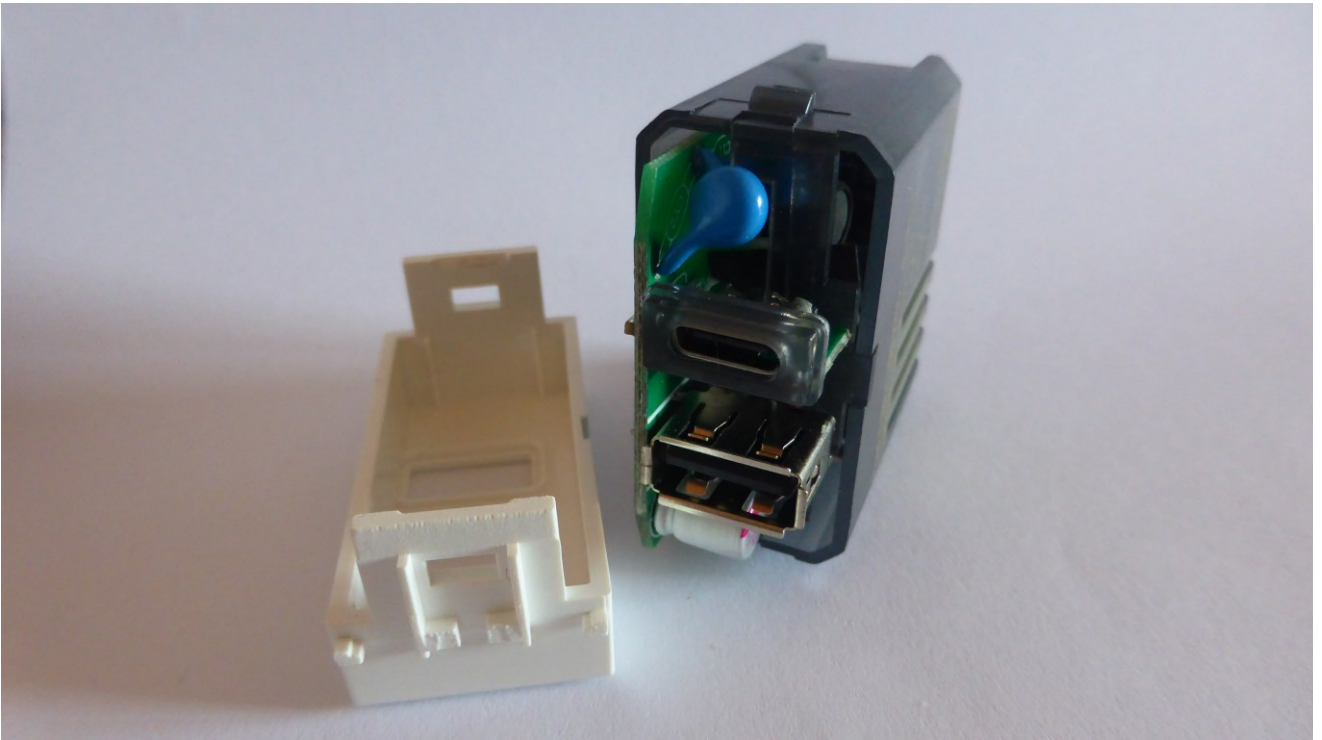


Photo N. 5

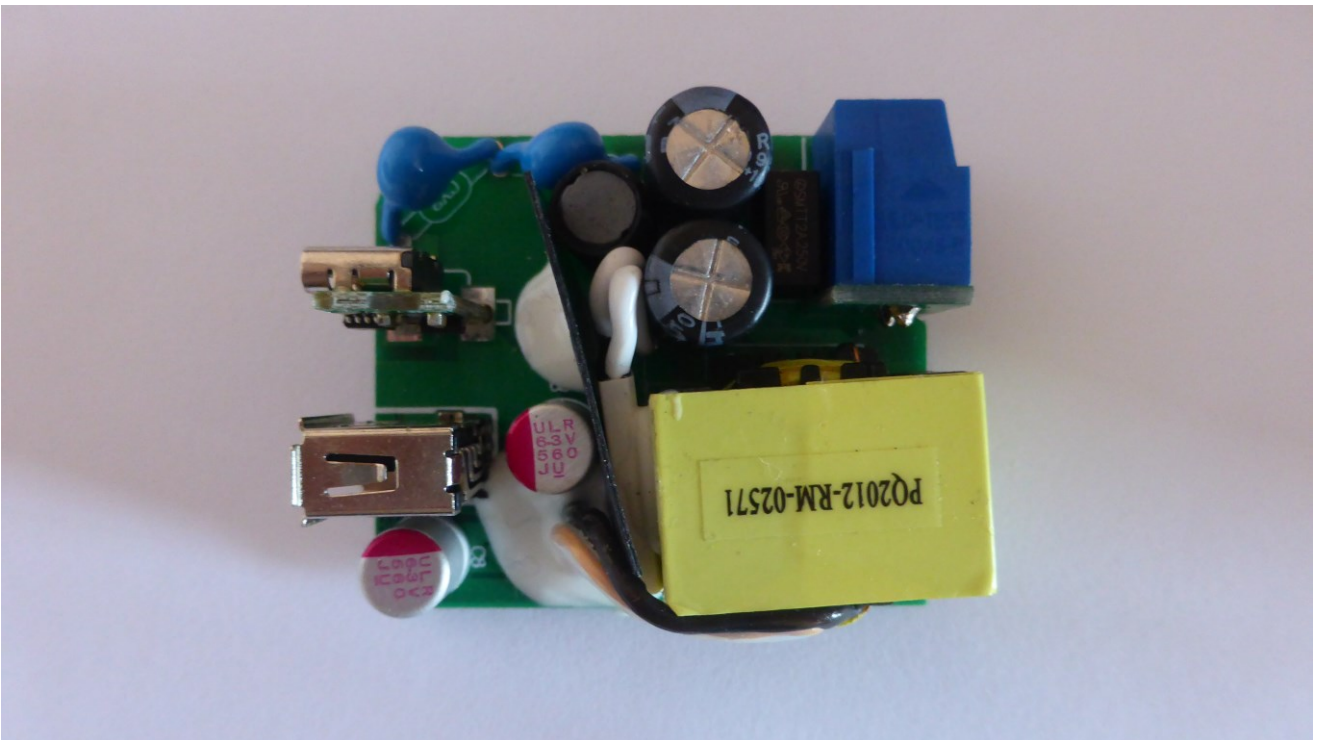


Photo N. 6

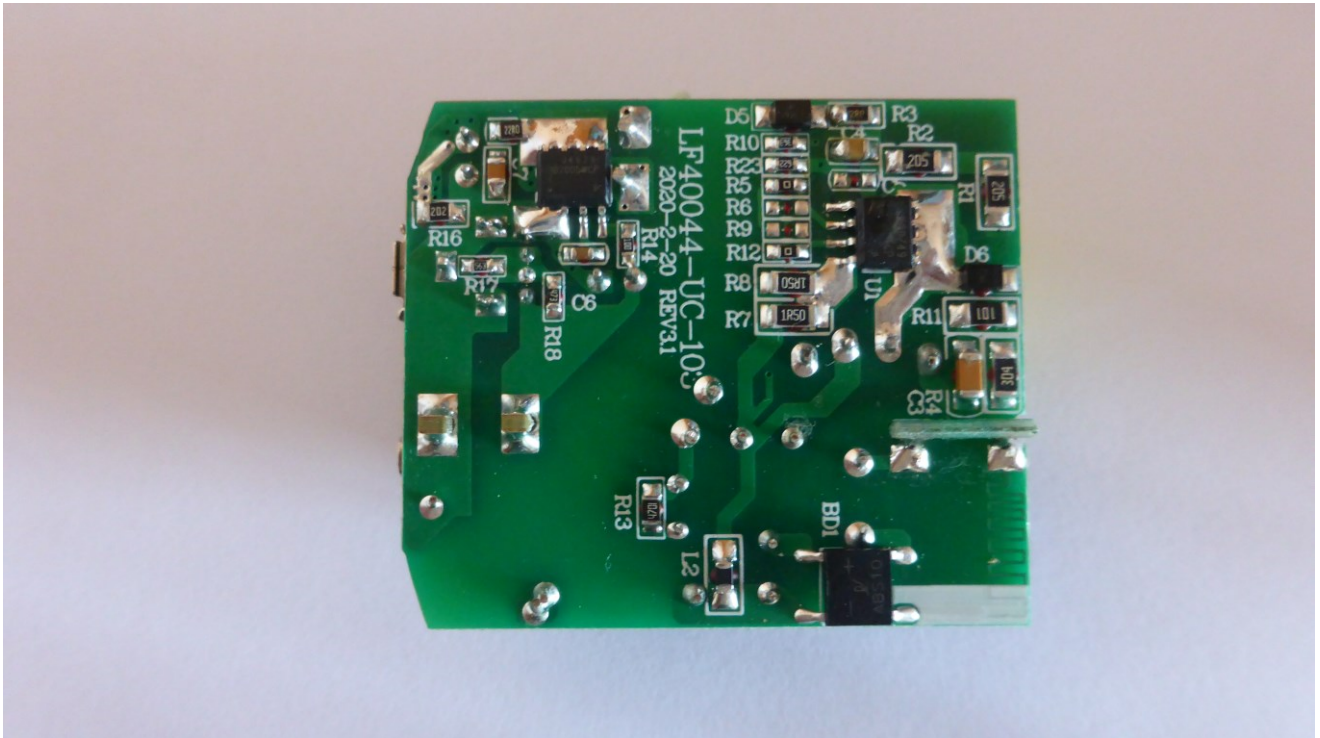


Photo N. 7

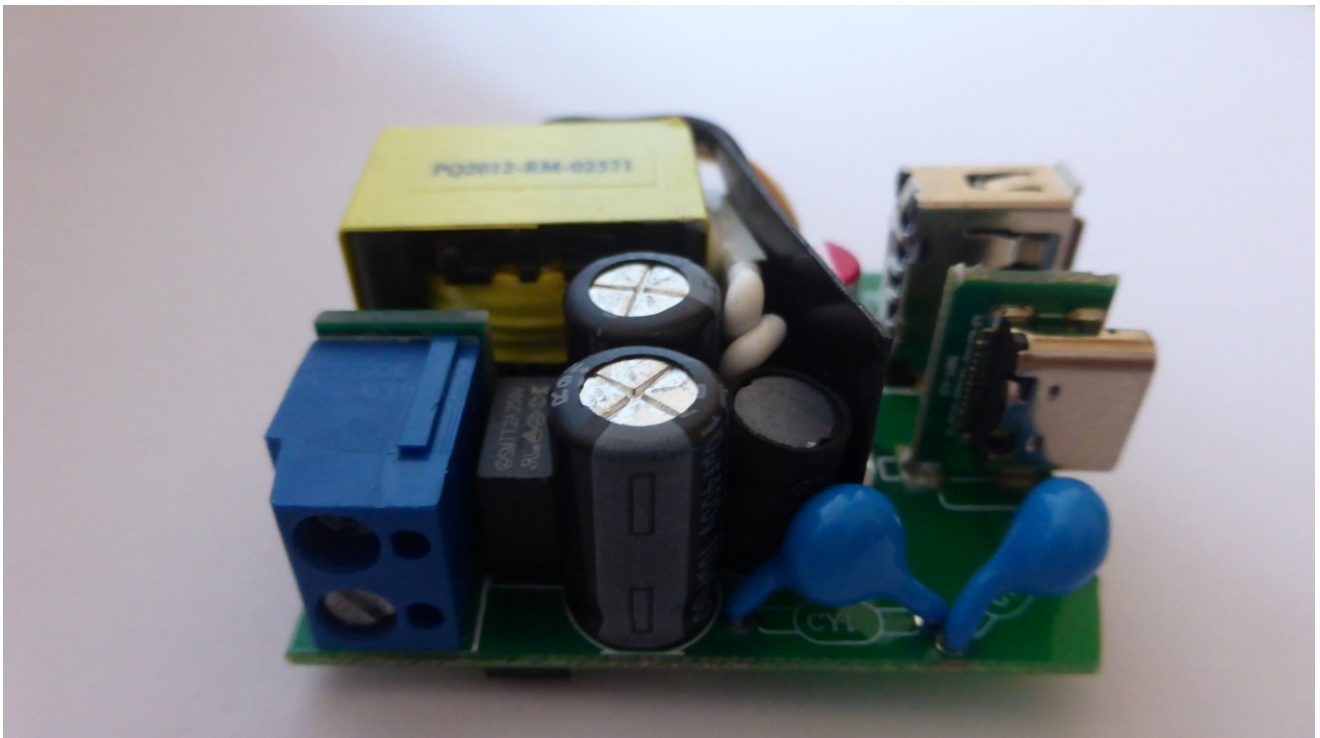


Photo N. 8